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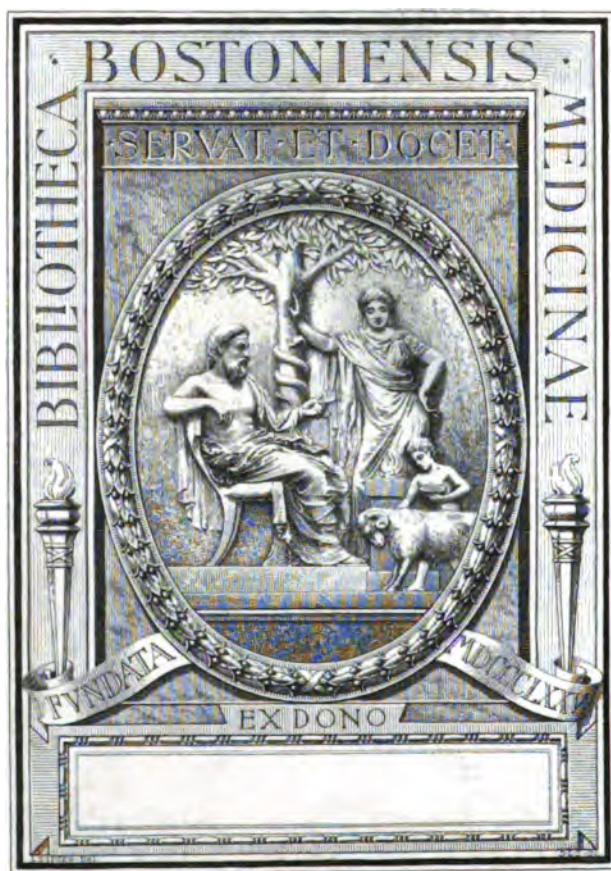
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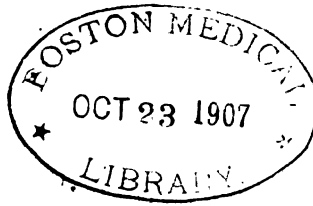
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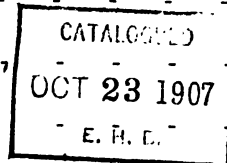
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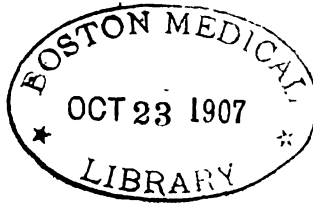
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ST. LOUIS

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No. 1.

ORIGINAL CONTRIBUTIONS.

Tuberculosis in the Mississippi Valley.

By WILLIAM PORTER, A.M., M.D.,

ST. LOUIS, MO.

Professor Clinical Medicine, St. Louis University; Director National Association for the Study and Prevention of Tuberculosis.

THE title of this paper has not been chosen because tuberculosis in the Great States of the West presents characteristics unknown in other localities. It is rather because I would make a direct appeal to the physicians of this most important section of country, to demonstrate our sense of personal responsibility in the work of limitation. I use the words *our* and *work* advisedly because I feel that in the past I have been, in many cases, a poor advisor on account of imperfect knowledge of the laws which govern the spread of tuberculosis, and which apply in the care of every case. Our present knowledge is far from complete, but it at least has developed more practical wisdom, hope, and applied energy looking not only to cure, but to prevention. I believe we may all confess that we have not always done our best for this large class of cases and if today we have a little more light, the inference is obvious.

The word *work* should have a place in every discussion of

this subject. It is not a matter of sentiment or debate on the rostrum or in professional circles alone; it is work, that must tell. The exercise of constant care in each individual case or threatened house-hold, effort in creating public sentiment, vigilance in enforcing sanitary laws, all this backed by study of the conditions under which tuberculosis increases or is retarded, is in the unmistakable work of the physician who assumes to be the guardian of public health. I wish I could make plain the proposition, that the educated physician who allows a case of consumption within his reach to go unwatched, untaught and unguarded, is as culpable as though that case were a case of smallpox, or yellow fever. Even more so, for tuberculosis is more insidious, more general, claims more victims, and withal is more easily controlled than any other infectious disease.

Just here, let me urge that we no longer endeavor to throw the responsibility upon climatic conditions. Those who have given this subject most thorough study and whose experience is most extensive, say that special climate for tubercular cases is not a *sine qua non*; that it is fresh air, out-door life and general hygienic conditions that we need and that the best climate for the consumptive is the home climate. Trudeau in getting unequaled results in the Adirondacks. Flick is doing advanced work at the Phipps Institute in Philadelphia far down in the densest part of the city. The great Brompton Hospital for consumptives is in the heart of the metropolis. It is not many years ago since the elder Flint sent his consumptives to the prairies of Illinois, the very region from which too many of us unthinkingly have been sending these poor dependent ones. Any one who has his monograph on "Phthisis" will see in what esteem this great leader held the Mississippi Valley as a home for the tubercular. Conditions have not changed since then. The reports from the Boards of Health from all the states and territories of the United States show that in Missouri the death-rate is a little less than the average. There is no climate on earth to which we can send our patients that is so much better that it will recompense for the comforts of home and the care of the family physician who is better fitted to care for the individual conditions than any one else.

The problem then is one which either in the individual or the general public must be solved at home.

To be efficient in this work, we must keep ever before us several truths: First, of all, *tuberculosis is communicable*. The recognition of this will make us more watchful of the hygiene of the sick-room, and more urgent in our warnings to the attendants. Second, *tuberculosis is insidious* in its attacks and progress. This will lead us to greater care in cases in which there may be merely a suspicion, and to be more exact and painstaking in our examinations. Third, *tuberculosis is curable*. This should give us courage, and enable us to aid our patient to renewed effort and hope. Fourth, *the conditions of disease in the consumptive are generally controllable*, and by the use of similar judgment and methods which we would employ in other diseases, many of these symptoms may disappear.

The magnitude of the work in the limitation of tuberculosis is scarcely to be expressed in figures. May I give a few facts proven by the most authoritative statistics. At present rates, one-seventh of those now living in cities and one-tenth of those living in the country will die of tuberculosis. At present there are in Great Britain 200,000 (estimated) poor consumptives and the annual cost to the nation is about \$155,000,000. In St. Louis 100,000 of the present population and in Chicago 150,000 will be its victims. In Illinois last year 7,000 died from consumption and the economic loss was estimated at \$36,500,000. In Missouri the figures are proportionately as large. In St. Louis it is estimated that are at present 5,000 cases of consumption and in Chicago 8,000. Four times these totals may approximately represent the number of infected cases in the respective States. Multiply the number of cases by $2\frac{1}{2}$, the average number of years of duration of all cases and the anxiety of and danger to others and you have, plus the economic loss, a sum hardly to be conceived. The fact that we physicians have it within our power to limit this disease and reduce the suffering and loss should be an ever recurring appeal that may not be silenced.

If you ask me what are the possibilities of limitation, I answer by asking what are you willing to do? In New York and Philadelphia there has been a reduction of deaths from consumption in ten years of over 40 per cent. That would mean 3,000 fewer deaths last year in Illinois alone. It would mean the saving of 40,000 lives in St. Louis out of the 100,000

doomed at present rates to be its victims. It would be the saving each year of nearly \$15,000,000 in Illinois—\$10,000,000 in Missouri, and a like proportion in other States. It would lessen the danger of infection to others by 50 per cent. If it is true that one-tenth of those now living in the United States will die of tuberculosis, you have but to multiply 40 per cent of 7,000,000 by the average duration, two and one-half years, and you have a cycle of time beyond human estimation, changed from years of suffering and helplessness to cycles of health and vigor.

If these statements are too general and and too stupendous to fully impress us, authoritative as they are, let us look at some individual statements. Pasteur said: "It is within the power of man to stamp out all parasitic diseases from the face of the earth." Williams of London analyzed the statistics of 1000 private cases and found 802 living, 46 per cent cured, and those who were worse only 28 per cent, while in the rest, the conditions were stationary. I think I may state unhesitatingly, that the experience of those who are honestly making the practical application of modern research in tuberculosis, will corroborate the statements of results published by Dr. Williams. One more reference. Some years ago the mortality in the English army from consumption was 6.8 per 1000. Since then the hygienic condition of the barrack-rooms has been improved and care taken to prevent infection and the death rate has been reduced to 2.5 per 1000.

Let us narrow the application, each to himself. If the officers and physicians in responsible places had not used every effort to limit yellow fever at New Orleans would they not have been culpable? If our Health Boards at our sea ports had not guarded us against the bubonic plague, would they not have merited censure? Yet we have enough of knowledge to at least limit this disease one-half, which has a fatality in this country alone in comparison with yellow fever of 200,000 to 50. Are we to be held blameless, in failing to use every effort to reach the result obtained elsewhere, and in forgetting our own responsibility not only as physicians but as good citizens?

It is with the belief that every physician will do his whole duty when once that duty has been made plain, that I have presented the few foregoing facts. May I now call attention to some almost self-evident propositions suggested by this call

to duty? The first is, as has been stated, a sense of *personal responsibility*. No argument is needed here. Others may, and must help, but the physician must lead. It is largely a matter of education and the physician is educated for the very purpose of leading in such crusades. The invasion of any other infectious disease would make him keenly alert. I know of a physician, who, having a mild attack of smallpox, continued to see patients. The disease spread rapidly among his patrons and when his carelessness or ignorance was made public, he narrowly escaped being mobbed. He simply ignored his training and personal responsibility. Dare we criticize him too keenly?

The second need is that we *recognize the conditions under which tuberculosis is acquired*. I need scarcely discuss this thought in detail. Every physician knows more of this subject than he enforces in his practice. I believe that imperfect as our knowledge is regarding many of the phenomena of tuberculosis, that we know enough to justify the dictum of Pasteur, if we would only put it into practice. Personal and habitation sanitation should receive the most careful scrutiny in each case. Especially should ventilation and free air interchange, be insisted upon and directed. The care of the sputum, so easy yet so much neglected, the same care extended to the eating utensils, and the clothing, is so much a part of the doctor's duty now, that his insistence upon it is a question of morals. His failure is logically a violation of "thou shalt not kill." But I am sure no such criminality need be laid at the door of the Western physician so soon as he realizes his own personal responsibility, and the effective means for limitation within his reach. It is simply knowing and doing.

The third demand, is for *local organization*. Without the help of the lay press and the lay brother the best results can not be obtained. It is a campaign of education. The people must be made to understand and then local authorities to act. If there is a place for temperance societies and political parties, and anti-horse thief organization, surely there is need for an anti-tubercular league which will oppose this most insidious destroyer of life and happiness. One horse in 50,000 is stolen, but 5,000 citizens in that number will die of consumption. One man in 1,000 will die from too much whisky, but from the same company 100 will be the victims of tuberculosis. Is there not need of organization?

I would emphasize this last thought and say that it is the added duty of the physician to urge the formation of an anti-tubercular society in his town or city. It will lead to a discussion of the facts known as necessary to limit the disease. It will aid in passing and enforcing local laws against spitting in public places and conveyances, and unsanitary conditions in public buildings. This will have a desired reflex influence in the average home. Such organizations can be made the means of distributing instructive literature, in providing for lectures if need be and in securing instruction, both practical and theoretical in the schools. In all this the physician can lead and direct. None other so capable, so fully trusted for such work as he.

One other word as to agencies in this duty. There is, and rightly so, a deep-seated prejudice against the discussing of medical topics in the public press. It is rather the abuse than the legitimate use of the newspaper column by the physician that has led to its disfavor. I believe the publicity of practical propositions for the limitation of tuberculosis is an exception. I believe also that the local physician should lead in such publicity. In an very earnest discussion of the subject in the East St. Louis Medical Society, composed of some of the most thoughtful and ethical men in our profession, it was the unanimous expression that the public press should be utilized to the utmost in diffusing knowledge upon this most important of all public questions.

The best magazines and papers can always be counted upon to aid in such a cause, and some of them have done yeoman service in this work already. The earnest physician will not be hindered or foiled in his work by the cry of some cynical rival who fails to comprehend the sense of duty and point of vantage.

What is being done in this field of work in this country?

First of all there has recently been formed a "National Association for the study and limitation of Tuberculosis." This Association has elected directors representing every section of the United States and every department of study. Its activities are being felt everywhere, and the annual reports are store-house of knowledge unequaled in the literature of the world. Second, all the leading States of the Union have, or soon will have, sanatoria which will not only be houses of refuge and cure for the few, but places of instruction, object-lessons,

for the many. The general government is carrying out this plan, and it is not unlikely that a Cabinet Office, specially urged by the members of the National Association, may be provided ere long. If it would help to save 40 per cent of 7,000,000 of our citizens and almost one-half of \$150,000,000 annually, it can not be demanded too vigorously.

In our own and adjoining states a good start has been made. In Iowa, college courses have been appointed and a State Society for the Limitation of Tuberculosis, is organized. In Illinois the Board of Health has done much advanced work and expended much time and money in teaching and enforcing the known laws, laws vital to the limitation of tuberculosis. The last report is an epitome of the subject which should be in the hands of every physician. In Missouri our Legislature has made a grant of \$50,000 for a sanitarium for consumptives, and plans and location have already been selected. There is no reason to doubt but this enterprise will be well cared for. Local societies are being formed, and each County Medical Society is authorized by the State Association to maintain a committee to study and report upon tuberculosis, and to gather statistics for general use.

In St. Louis the work has been along different lines, but all of them practical. The "anti-spitting law" is being enforced with a marked improvement in the cleanliness of the street-car and side walk. The recent ordinance for registration of consumptives and disinfection of rooms and houses by consumptives is working smoothly and effectively. Mount St. Rose Sanitarium for consumptives has had 650 patients in 3 years and the capacity will doubled in the near future. The city has a special hospital for its tubercular dependants and we expect to have a "tent city" soon. The "Society for the Prevention of Tuberculosis" has not been idle. It has this year circulated 250,000 pamphlets and circulars, has provided lectures, and matter for publication, and purchased placards for 1000 street-cars and manufacturies and public buildings.

But I would not emphasize or eulogize any special effort that has as yet been made. All work in this direction is in its incipency, and the good results of such work in different cities as before referred to, is a proof of the effectiveness of such labors when they shall have carried further and longer the methods of prevention.

If it is thought that I have spoken too strongly of the

personal responsibility in this work, my plea is that it is not so much a matter for general effort as it is the plain direct duty of each one of us to put into practical use all the knowledge and earnestness at his command, and that no one of us can avoid or transfer this responsibility. The soldier on picket-duty is responsible for the whole army, and he guarantees faithfulness with his life. Each physician is more than a sentinel, and has more at stake than any commander. If I have been too personal and too urgent in this writing let me add that I have been influenced in it by the sense of my own need for increased earnestness and the memory of much that I have left undone which I now know should not have been neglected.

Juvenile Glaucoma Simplex Associated With Myasthenia Gastrica et Intestinalis.

Report of a Case.

By JOHN GREEN, JR., M.D.,

ST. LOUIS.

PRI-MARY glaucoma is observed in three principle forms—acute, chronic congestive and chronic simple. Each is sufficiently distinct in character to render diagnosis in typical cases a matter of no particular difficulty. Mixed forms in which the clinical picture is less clearly defined are also encountered.

You are, doubtless, familiar with the appearances observed in an attack of acute glaucoma. After ominous premonitory signs the storm bursts in all its fury. The agonizing pain, rapid loss of central and peripheral vision, congested globe, steamy cornea, shallow anterior chamber, hazy media, increased tension and cupping of the disc constitute an unmistakable series of symptoms. The second type—chronic congestive glaucoma—occupies a position intermediate between the acute and chronic simple forms. This type, as the name indicates,

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is essentially chronic in character. It bears the usual earmarks of glaucoma, namely, diminished vision, contraction of the visual field, slight shallowness of the anterior chamber, semi dilated pupil, increased tension, cupping of the disc, etc. From time to time exacerbations occur in which the disease partakes more of the character of acute glaucoma.

Chronic simple glaucoma, the least clearly defined of the three types, comes insidiously upon its victim like a thief in the night. One eye is usually attacked before the other and the disease may have made great progress before the patient is aware of any trouble. Indeed, an unobservant patient may become totally blind in one eye, realizing his condition for the first time when the fellow eye begins to fail. To outward appearance the eyes may seem entirely normal, though occasionally there is some congestion incident to a dilation of the anterior perforating vessels. The cornea is transparent, the media are unclouded. The anterior chamber is normal in depth, or only slightly shallow. The pupils are round and mobile to light and accommodation. Frequent tests at different times in the day are usually necessary to determine the state of the intraocular tension, which in this type is not constantly above the normal. The ophthalmoscope discloses a glaucomatous excavation of the nerve head. Central vision is often well preserved. The visual fields are almost invariably contracted either concentrically or from the nasal side.

It is not my purpose to enter into a discussion of the etiology of glaucoma. This is a very large subject about which there are theories *galore*, no one of which satisfactorily accounts for all varieties of the disease. The *sine qua non* of glaucoma is increased intraocular tension. Upon the latter depends all the other signs of the disease. It is sufficient for our present purpose to understand this fact without delving into the mystery of its origin.

The case which I wish to review with you this evening is one which has been of great interest to me because of an apparent connection between the ocular disease and a constitutional trouble. I fear that specialists, especially workers in so sharply limited a field as ophthalmology find some difficulty in extending their medical horizon beyond the limits of their own domain. As this case illustrates the advantage of a more extended view I trust you will find it of interest from the standpoint of general medicine.

Miss A. A., aged 30 years, a tall, sallow woman came under observation July 7, 1904. The following ocular history was elicited: When 15 years of age the patient accidentally discovered that she could not tell the time on the school room clock with the left eye. The sight grew progressively worse and 6 years ago the eye became totally blind. From the age 15 to 18 years she attempted to study music but was finally compelled to relinquish this pursuit as well as to cease using the eyes for any purpose whatever on account of ocular aching. On two different occasions during the past 8 years she has obtained glasses which failed to relieve the symptoms. The eyes have never been inflamed or severely painful.

At present she is entirely unable to use her eyes. the print wavering and blurring almost as soon as she directs the gaze upon the paper. The eyeballs feel tense and ache. There is a sense of pressure in the orbits. Latterly she has had much occipital pain.

Ocular examination: The left eye diverges about 15° . The globes are free from congestion, except that the anterior perforating veins in the left eye are somewhat enlarged. The right pupil is 3.5 mm. in diameter, circular, and reacts well to light and convergence. Left pupil is slightly larger and fixed. The anterior chambers are of normal depth. Left cornea is anesthetic. Right eye T. + ? Left T. + 1.

R.E.V. 16/19. L.E.V. faint p. l.

Ophthalmometer, R.E. As. 1. Mc. 15° . L.E. As 3. Mc. 165° .

Ophthalmoscope, R.E. Media clear, optic disc of a whitish-gray and the seat of a steep glaucomatous cup measuring 8 D. (nearly 3 mm.) The nerve head is surrounded by a well marked scleral ring. Arterial pulsation at the disc can readily be elicited by gentle massage of the globe.

L.E. presents quite similar appearances except that the disc is excavated to a depth of 12 D. (4 mm.) The visual field for white determines a slight inferonasal contraction. A diligent search failed to reveal partial scotomata or sector defects within the limits of the field. Color vision normal. No central scotomata either for form or color. Diagnosis: Glaucoma simplex, both.

A single small drop of eserin sulphate $\frac{1}{3}$ of 1 per cent produced marked but not excessive miosis. The patient was instructed to use a drop of an aqueous solution of pilocarpine muriate $\frac{1}{2}$ of 1 per cent, three times a day. It was noted that the miosis resulting from each instillation lasted about two and a half hours.

The effect of this treatment was to lessen the ocular discomfort and to relieve partly the occipital pain. There was no effect on the field of vision. Before leaving for home the patient was provided with spectacles for constant wear—R.E. + .75 cyl. ax. 15° . L.E. — 0. One month later the patient returned and stated that she had been

practically free from ocular discomfort but was entirely unable to use the eyes on account of the immediate appearance of a blur over the print. R.E.V. 16/24. Alteration in the strength and axis of the cylinder did not improve vision. Visual field unchanged. Pilocarpin solution was supplemented by a 1/5 of 1 per cent solution of the alkaloid of eserine in castor oil, which was used once a day. As the latter drug in this strength produced ocular pain lasting several hours, I substituted a weaker oily solution (1/10 of 1 per cent) which proved equally effective as a miotic and did not evoke any ocular discomfort.

In October, 1904, the conditions were practically unchanged except that the field on the temporal side had shrunk a little.

In December, 1904, the field was the same as in October but central vision had gone off to 16/30. On attempting to read a magazine the words "danced and wavered" and the eyes pained.

Up to this point the course of the disease certainly did not augur well for the future. There had been a slow but steady loss of central vision and a gradual drawing in of the temporal field. I suggested to the patient the possible necessity of an iridectomy, explaining the immediate and remote hazards of such a procedure.

With a view to obtaining as much collateral information as possible, careful inquiry into the patient's general medical history was made. Although she had never been strong she had never suffered any prolonged illness. She admitted, however, being habitually constipated, a condition which had persisted since early childhood. Numerous drugs had been tried with only temporary relief. The patient was referred to Dr. Jesse Myer, who elicited the following additional points: The father died of some stomach trouble, presumably cancer, and the mother of "locked bowels." For the past 9 years the patient has had stomach trouble characterized by pain in the epigastrium and belching. She has never vomited or passed blood.

The chief complaint is of constipation. Appetite is good and there has been no loss of weight. The patient can eat practically everything she cares to without suffering distress. Physical examination determined a floating tenth rib, intermittent and weak heart sounds (dropping every sixth beat); pain on pressure in the left hypochondrium and posteriorly over the eleventh dorsal vertebra; stomach displaced downward. Urine showed a trace of albumin (no casts). Diagnosis: *Myasthenia gastrica et intestinalis*, probably congenital. The patient underwent a course of dietary and electrical treatment with abdominal massage for two weeks, early in January, 1905. Improvement in the abdominal symptoms was immediate. On January 17th the patient volunteered the statement that "the treatment for constipation had helped the eyes a great deal." It appeared that she had been whiling away the tedious hours at the hotel by reading novels and was gratified to find that each succeeding day gave her additional

ability to use the eyes. She was now able to read continuously for ninety minutes without any sense of strain or blurring of the letters. This statement was confirmed by a reading test in my office extending over a period of two hours. R.E.V. had risen to 16/19. The recognition of the letters was quick and unhesitating. No enlargement of the field. She was permitted to return to her home with instructions as to the continuance of the constitutional treatment. The pilocarpin and eserine drops were continued.

June 6, 1905, the improvement in the general condition has been maintained, the patient having a daily movement from the bowels. R.E.V. 16/15. The field has again widened on the temporal side. Treatment continued.

August 16th, still able to use the eyes freely. R.E.V. 16/12. (Quick recognition). Field as on June 6th. Patient was cautioned against excessive use of the eyes.

To summarize: A young woman free from hereditary ocular taint and afflicted with a chronic constipation beginning in earliest childhood, is attacked shortly after puberty with glaucoma simplex. In one eye the failure of vision is progressive and results in blindness. Near work is found to be impossible on account of ocular pain and blurring. Finally, the vision of the fellow eye beginning to fail, she seeks relief.

Treatment with miotics over a period of several months fails to check the progress of the disease. General treatment directed against the constipation is instituted. Improvement in the general condition is accompanied by a like amelioration in vision, in the ability to use the eyes, and later by a widening of the field.

Inferences drawn from the study of a single case are admittedly of little value. We must be content with noting the facts which to my mind are at least highly suggestive of an immediate etiological relationship between the constitutional and ocular condition. Constipation is, indeed, accorded a place among the "possible contributing constitutional causes of glaucoma," (Treacher Collins); but in this case the assumption of a more intimate relationship seems not unjustifiable.

One word with reference to treatment. Ophthalmic surgeons are pretty well agreed that in the acute and chronic congestive types operation is imperatively indicated.

Despite the transitory popularity of such procedures as sclerotomy, paracentesis of the anterior chamber and sympathetomy, the classical iridectomy still remains the operation of choice. No operation in surgery gives greater satisfaction to the surgeon and patient alike than a successful iridectomy in acute glaucoma. The immediate relief of agonizing pain, rapid subsidence of the symptoms, with restoration of vision to an eye almost blind may confidently be expected in the majority of these cases.

But with iridectomy in glaucoma simplex the showing is far less favorable. While the immediate result may be excellent, the operation has seemed, not infrequently, to hasten the downward march of the disease. Certainly a pessimistic view would seem the only justifiable one in the light of recent statistics published by Wygodsky (*Klin. Monatsbl. f. Augenh.*, September, 1903). In a study of the immediate and remote effects of iridectomy in 458 cases of all kinds of glaucoma, he found that the immediate effect was favorable in all cases of acute glaucoma, in 49 per cent of chronic irritative glaucoma and in 90 per cent of glaucoma simplex. A re-examination two or more years later determined certain very striking differences which may be tabulated as follows:

No. and type	Improved	Unchanged	Deteriorated	Blind.
37 Acute cases	76%	5%	11%	8%
147 Chronic cong.	10%	40%	30%	20%
129 Simple	1 case	16%	48%	35%

Such statistics explain the reluctance of many surgeons to pin their faith to an operation which promises results in cases of simple glaucoma less satisfactory than those attained by persistent and intelligent non-operative management. In conclusion I would again call attention to the lesson which this case enforces, namely, that certain of the problems which confront the specialist can be satisfactorily solved only by collaboration between the specialist and his brother in general medicine.

[Vanol Building].

Treatment of Empyema.

Report of Cases.

By ROLAND HILL, M.D., C.M..

ST. LOUIS, MO.

A FEW of the cases of empyema that have come under my observation have presented conditions so out of the ordinary that I thought a report of them might be of interest to the members of this Society. As a preliminary to this report, a few general remarks on the treatment of empyema may be appropriate.

In cases of acute empyema we are all agreed as to the necessity for the evacuation of the pus as early as possible. On the other hand, in chronic cases, where the patient is emaciated, the heart weakened, the chest deformed, and a septic condition existing, it is sometimes a matter of most careful judgment to decide as to how far operative measures should be carried. Before operating on these cases, we should consider a number of important facts:

1. The general condition of the patient.
2. The duration of the disease, and degree of deformity of the chest.
3. The presence or absence of sinuses.
4. Complications, as, for example, tuberculosis.

1. The general condition of the patient is most important, and must be carefully considered. If he has been having repeated attacks of septic troubles, followed by discharge of pus from one or more sinuses an operation should be done when he has recovered a fair degree of strength. Occasionally, we get cases, as one here reported, where patients have lived for years with sinuses continually open and discharging. It is not uncommon in these cases to find more than one sinus open at the same time, and scars where others have existed.

While the patient is suffering from this constant menace in the thoracic cavity, there is always danger of amyloid or lardaceous degeneration, as well as any other complication

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that might attack any enfeebled organism. The sinuses that enable nature to throw off the pus may open in any situation. Very often they open just above and posterior to the nipple. Many of these are long and tortuous, and filled with low grade granulations that bleed very readily when the finger or probe is inserted into them.

The degree of contraction of the chest varies within wide limits, and is of extreme importance. The heart is often bound over to the right with strong adhesions. In exploring a cavity, it is well to leave these adhesions alone, as manipulation may be followed by collapse. The presence of adhesions binding the heart in a new position greatly reduces cardiac power, and often leads to swelling of the lower extremities. It also tends to cause a passive hyperemia of the liver, and a hydremic condition of the vascular system.

2. It is necessary that the duration of the disease be given careful attention. If the lung has been bound down for months, it is not likely ever to expand sufficiently to fill the cavity. In children there will be much more expansion than in the adult, because the lungs, not having attained their full growth, make every effort to fill the cavity as the child develops. In a child the chest is not so rigid, and the lung more elastic, hence, the probability of perfect recovery is much greater in a child than in an adult.

3. In those cases where discharging sinuses exist, the condition of the patient is poor, and it may be necessary to do a temporary operation to secure drainage before attempting to secure closure of the cavity by the method of Estlander. This may consist in simply dilating the sinus, and inserting a tube, or if this can not be done, a rib may be resected in endeavoring to secure free drainage, and improving the patient's condition prior to radical operative measures.

4. Other complications naturally affect our prognosis very materially. Thus, we know that in a certain percentage of cases the purulent collection is caused by an invasion of the tubercle bacilli. In nineteen cases investigated by Erlich, tubercle bacilli were found to be present in seven cases. This, of all complications, should lead to a guarded prognosis.

The operative measures for empyema may be considered under the following heads: *A*, Aspiration; *B*, Incision; *C*, Resection of ribs, including Estlander's; *D*, Schede's thoroplastic operation.

A. Aspiration should always be done to determine the presence of pus, unless the existence of sinuses should render it unnecessary. In doing an aspiration for empyema, an ordinary trochar may be employed, but it is preferably done by means of an aspirator, to which you can apply considerable suction force.

For aspirating an empyema it is essential that a needle or trochar be of sufficient size to allow of thickened pus and fibrinous flakes passing through. One may aspirate a chest half full of pus with a hypodermic needle, and still be unable to determine its presence, owing to the impossibility of getting very thick pus through a small needle. Aspiration will never cure a case of chronic empyema, although it may possibly cure an acute case in a very young child. Still, it is a very useful procedure for diagnostic purposes, and also for temporary relief in cases where a radical operation would be dangerous. It is very useful as a preliminary measure a day or two before doing a radical operation, as it gets structures long pressed upon by purulent collections used to less pressure, and hence, lessens the risks that always follows the sudden withdrawal of a large amount of pus from a pleural cavity. Aspiration is done in almost any situation, but preferably near angle of scapula, or in mid axillary line in fifth or sixth intercostal space. In aspirating a pus cavity, every antiseptic precaution should be taken in order to prevent a secondary infection of the pus, and decomposition with its attendant septic troubles. An aspirating needle is inserted just above a rib forming the lower boundary of the intercostal space.

Aspiration, properly performed, is a harmless procedure, and gives invaluable information to the surgeon, and great temporary relief in many cases to the patient. Even aspiration, however, requires to be done with care, for the lung may be punctured, and a man, if very careless, might even injure the pericardium. If, during aspiration, the patient becomes weak and depressed, it should at once be discontinued for twenty-four to forty-eight hours.

B. Incision. The treatment of acute empyema in young children by simple incision will sometimes result in perfect recovery. In chronic cases it is difficult to see how a simple incision could, by any means, effect a permanent cure. The incision in these neglected cases should only be done where an abscess is pointing, and pus threatens to escape. Here, we

can incise, draw off the pus, and the radical operative procedures can be resorted to later.

C. The radical measures referred to comprise the resection of enough of the bony structures of the thorax to allow of thorough drainage, and also, if possible, of sufficient contraction to close the cavity that exists. In cases of empyema where the ribs are too close together for the insertion of a tube between them, or where discharging sinuses remain after incision, resection of ribs is necessary. This will be found invariably the case in all cases of chronic empyema. If the discharge comes from a small sinus where a tube has been retained too long, this should be dilated, curetted and probably a piece of rib removed, and the cavity packed allowed to heal from the bottom. The vast majority of these cases, however, do not present conditions so easily dealt with. In most of them a cavity of considerable size exists, the lung has been considerably impaired, possibly completely carnified and bound down by adhesions, the chest retracted. This is the class of cases that gives the greatest amount of trouble, and in which it is most difficult to secure a desirable result.

In resecting ribs in these cases, the point of resection is opposite the portion of lung that can expand no more, and the pieces of ribs removed should correspond as closely as possible to the anterior limits of the cavity it is desired to close. Thus, in adults, it may be necessary to remove sections of several ribs varying in length from one-half to several inches.

The exposure of ribs to be resected, may be done either by several incisions each being in the intercostal space, between the corresponding two ribs to be resected, or by one long incision, exposing all the ribs necessary at once. The latter is recommended by Goodlee, who holds that it is the best and most expeditious procedure. Jacobson, in his operative surgery opposes this, and thinks that the shock will be greater, and more blood will be lost than where several incisions are made. It would seem, however, that the greater rapidity with which one flap could be raised, and the lessening of time under the anesthetic would more than counterbalance any objections to the procedure.

Whatever operation is done should have for its object the removal of sufficient of the bony structures to allow of

complete closing of the cavity. With regard to the time at which this operation should be done, as a rule, it may be stated that it is necessary when the patient has recovered from the primary operation, and the powers of obliteration at a standstill.

D. Schede's thoroplastic operation is sometimes resorted to where the preceding one of Estlander fails. This is only adapted to cases where heroic measures are necessary. It consists in resecting not only the bony structures covering the cavity, but the muscle and pleura as well, leaving only a skin flap, which is then brought in contact with the inner side of the cavity. The operation, from its very severe character, is adapted to a very limited number of cases.

The first case I have to report is that of Annie B., white, German-American, aged 21, living on a farm with her parents in Warren County.

I first saw this patient on October 27, 1898. She was very thin and emaciated, and had been practically bed-ridden as a result of an attack of empyema that had occurred ten years before. The patient had suffered from repeated and very serious septic attacks, but Nature had come to the rescue each time, and a new sinus had formed and pus had been freely discharged, leading to an improvement in her condition. At the time I saw her she was very much emaciated, and very anemic. The left side of her thorax was very much shrunk and deformed, and the heart was markedly displaced to the right so that the left border was approximately at the end of the sternal base. There were two open sinuses, one above, and the other above and to the inner side of the left breast. A further examination showed several scars where other sinuses had existed, and healed.

I considered the case very serious, and refused to do anything until her friends were informed of the dangers of operative measures. The patient, herself, decided to take the risk, and I deemed it my duty to do what I could to relieve her deplorable state. I first made an incision into the upper sinus, so as to introduce my finger into the cavity, in order to get an idea of its size and contour. Then a vertical incision was made, and a flap turned back so as to expose the ribs covering the cavity. These were so drawn that some were superimposed directly above others, two deep. However, after resect-

ing four ribs a good, free opening was made into the cavity, and a large quantity of pus evacuated.

The patient suffered from pronounced shock; a tube was quickly inserted in the upper sinus, and out through the cavity and new opening. The wound was then dressed, and the patient put to bed. It was necessary to give stimulants very freely for some hours, as it seemed as though she would not survive. However, she soon began to improve, and the wound closed in rapidly. As I left shortly after the operation, I was kept informed of her condition by Dr. James Stewart, of Holstein, who had charge of the case. She improved slowly, but gradually, and it was a long time before she gained much strength. She wore the tube in the side for five years, a new one being put in at intervals. It is only a couple of years since I advised Dr. Stewart to dispense with it entirely. Now, however, she is well, and does the work of an ordinary country girl.

The next case is that of E. M. S., aged 41 years, white, Austrian by birth, an insurance agent by occupation.

Mr. S. has always been a man of exceptionally good constitution, but two years before his present illness he had been drinking very heavily. In the early part of February, 1903, he became ill with classical symptoms of pneumonia; sudden chill, pain in the side, bloody expectoration, etc., and sent for me to see him February 2, 1903. His condition was so grave that I expected an early and fatal termination. However, after remaining in a most critical state until early in the second week, the symptoms abated somewhat, and it looked as though recovery would take place by lysis. The bloody expectoration gave way to that of a purulent character, and improvement did not continue. The patient's temperature ran from $99\frac{1}{2}$ to 102° , the pulse was weak and rapid, and the cough very severe. The matter expectorated had a most offensive character.

February 19th, fearing that we were dealing with an empyema, I inserted an aspirating needle in the pleural cavity, and drew off a quantity of exceedingly offensive pus that had the same odor as the expectoration. On the 22nd of February, I resected a portion of the sixth rib, in the mid axillary line, inserted a tube, and brought one end out between the eighth and ninth ribs. A quantity of the most offensive pus escaped, and free drainage was established. The patient's condition remained critical for two weeks, and then he began

to improve. The temperature became normal, appetite improved, and the patient began to gain in weight.

I dressed the wound every day, and because of the offensive discharge used irrigation to get the cavity as clean as possible. Each time we irrigated, the patient would cough very severely, and claim that he could taste the irrigating fluid. To prove definitely whether there was a communication with a bronchus, in the early part of April I injected into the drainage tube two ounces of a solution of methylene blue. Immediately a lot of this fluid came out of the patient's mouth and nose, dyed his moustache, and ran on the floor. This condition was evidently the result of an abscess of the lung that had broken into the pleural cavity, so that there was a direct communication with a bronchus.

On dressing the wound April 30th, I discovered that a very unpleasant little complication had occurred. The pin holding the tube was in the dressing, but the tube was absent. There was only one place that it could be, and that was in the cavity. I tried to reach this tube by means of different kinds of forceps, but did not succeed, and was forced to put the patient under chloroform, and resect a portion of the seventh rib, and found that the tube was nicely curled up behind it.

The further history of this case is uninteresting, as the patient rapidly improved. Early in June the last tube was dispensed with, and he went to Texas for a trip, and was gone several weeks, during which time he did considerable business. Since his return, he has been feeling well, working hard, and looks better than he has for years.

The third case that I have thought worth reporting is that of Mrs. John A., aged 38 years, white, American.

Mrs. A. is the mother of four children, and has always been a strong, healthy woman. On February 25, 1904, she was taken seriously ill with a well-defined pneumonia, affecting the lower lobe of the right lung. The case ran a severe course, but without any unusual symptoms until end of the ninth day, when temperature subsided, respirations became slower, and the patient seemed to improve. The temperature, however, did not reach normal, but continued to range from $99\frac{1}{2}$ to 102° .

Dullness continued very marked over right mammary region, extending from the upper border of fourth to sixth

rib, and out as far as the mid axillary line. On March 13th, an exploring heedle was introduced between fifth and sixth ribs in mid axillary line, to see if presence of pus could be determined, but none was found. The patient's condition remained about the same, and on February 27th, we aspirated between fourth and fifth ribs, to the inside of the mammary line, but without result, but on inserting the needle again, we found pus at the anterior axillary line.

The patient was removed to Mullanphy Hospital, and on March 30th I removed a section of the fifth rib, 1 1/2 inches long, just below the mammary gland, and a large amount of pus evacuated. Rubber drains were inserted, and the discharge was very free for some time. At the second dressing, a piece of lung tissue was discharged, tending to support my belief that the abscess originated primarily in the lung, and then became superficial with pleural adhesions.

The patient improved rapidly, and as the cavity healed the drains were gradually shortened. In June we were able to dispense with all drainage, and discharge the patient as well. This case illustrates an interesting condition, and one of practical importance. I have known two cases to die from want of repeated aspirations. In one of these cases, particularly, several aspirations were made, but pus not reached, and the post-mortem showed an abscess about an inch from one of the punctures.

Therefore, where we suspect pus, it may even be necessary to put the patient under chloroform, and make a number of aspirations in a systematic way to assure ourselves that pus is not present.

Tumors of the Cerebellum.

By EDMUND A. BABLER, M.D.,

ST. LOUIS, MO.

(Continued from page 348, December Number).

DIAGNOSIS.

At present the diagnosis of tumor of the cerebellum is not regarded as especially difficult, although it must be admitted that it may be absolutely impossible to accurately locate

the site of the growth or, as pointed out by Spiller, to determine its size and character. The fact that a growth in the cerebrum may cause symptoms closely simulating the clinical manifestations of a cerebellar tumor must not be forgotten. Very recently, Nonne²⁴ has presented a very interesting and a very valuable monograph in which he refers to several very instructive cases; in three of these cases symptoms of cerebellar growth without internal hydrocephalus were present, but at autopsy absolutely nothing could be found to account for the clinical picture.

Perhaps, the most constant and the most prominent symptoms of cerebellar growth are, headache, of an intense and persistent character; vertigo, increased upon exertion or change of posture; disorders of associated ocular movements; cerebellar ataxia; muscular weakness; developing blindness, and various cranial nerve symptoms. Miller does not regard tonic spasms and contractions as of frequent occurrence in tumors strictly limited to the cerebellum. The focal symptoms become of the greatest significance when the subject of surgical intervention is under discussion.

Fraenkel²⁵ has recently regarded early symptoms of irritation of the fifth or of the eighth cranial nerves of diagnostic significance in suggesting extra-cranial origin of the disease, while deafness, general locomotion inco-ordination, disturbances of circulation and respiration, hemipareses, or paralysis of conjugated ocular movements introducing the disease, favor a diagnosis of intra-cranial origin.

In a recent monograph Dana²⁶ has called attention to a syndrome of cerebellar posterior fossa tumors causing irritation and pressure; this is characterized by:

1. Loud, high-pitched, tinnitus or roaring and crackling noises, suddenly increasing in intensity.
2. Vertigo, usually objective and with or without forced movements.
3. A tendency to drop or fall in one direction or another instantly to the ground.
4. Sometimes sudden blindness and loss of consciousness.
5. In severe attacks, tonic spasms generally of extreme type. This lasts one or two, to five or ten minutes.

Dana pins a great deal of faith in this new syndrome,

but future experience must demonstrate its true value to the diagnostician.

Von Monakow⁸⁷ has indicated that the best diagnostic points for neurofibroma of the acoustic, are the absence of such symptoms as vomiting, dysphagia, etc., on the one hand, and on the other, the presence of general symptoms of cerebral tumor, such as headache, vertigo, and choked disc in association with cerebellar ataxia; rapidly developing deafness, paresis of the fifth and seventh nerves on the same side as the deafness, with associated ocular palsy, also on the same side, dysarthria and Gerhardt's symptom being absent. In these cases we must exclude peripheral ear diseases. Mills has asserted that if the ataxia is present, the tendency will usually be to *fall* or to *deviate* toward the side of the lesion. A review of the literature, however, would tend to indicate that this latter statement bears further study.

In some cases of fibromata of the acoustics, one sided deafness, tinnitus, facial monospasm, hyperesthesia over one side of the face, nystagmoid movements, slight paresis of the right abducens, vasomotor and cardiac disturbances; and, at times, accompanied by severe headache, nausea, vomiting, and optic neuritis, are the chief focal symptoms (Mills).

Tumors situated deeply in one lateral lobe of the cerebellum and involving the cerebello-vestibular apparatus, and perhaps, the vermis may cause symptoms which renders a differential diagnosis from tumors of the superior parietal region necessary. Mills has called attention to the fact that the chief diagnostic points in favor of the tumor being cerebellar, are the absence of astereognosis, and that of symptoms showing the loss or disturbance of muscular or cutaneous sensibility. Nystagmus is not usually present in parietal tumors, although this is a rule that is not without exception, especially if the tumor should extend far enough backward to involve the visual motor region of the cerebral cortex. Vertigo may be present in a parietal tumor, but the peculiar and extreme form of vertigo which has been described as due to disturbance of the cerebello-vestibular tract and centers, is not observed in parietal tumors. Unilaterality may be quite marked in cerebellar tumors. The invasion symptoms in parietal tumors will be found of great value in making a differential diagnosis.

Bruce⁸⁸ has found that lesions in the lateral lobes of the cerebellum may produce no disturbance of equilibrium, pro-

vided they are situated entirely external to the intracerebellar paths of the upper and lower peduncles of the nucleus dentatus (area of possible latency). If these structures are interfered with, either by pressure or by direct involvement, then the characteristic symptoms of cerebellar disease will be produced, and will depend in their character and amount on the nature and extent of this interference. If the cerebello-vestibular tract or Deiter's nucleus, be injured, then the usual stimuli will not pass either to the anterior cornua of the cord, or to the sixth (fourth) or third nuclei. Hence, may result the weakness of the same side, the tendency to fall to that side, the impairment of the conjugate deviation to that side, the tendency of both eyes to be directed to the opposite side, and the lateral nystagmus which occurs, especially when the eyes are directed toward the same.

When a tumor produces destruction of the cephalic portion of the vermis it causes a tendency to fall forward, while an irritation of this part of the cerebellum causes a tendency to fall in the opposite direction; a destructive lesion of the caudal portion will cause a tendency to fall backward, while an irritation will bring about the muscular adjustment necessary to overcome this tendency.

Trophic and visceral symptoms are frequent accompaniments of pontine affections; sometimes of bulbar; and very rarely, of cerebellar lesions. Polyuria, glycosuria, and muscular atrophy have been frequently found present in tumors of the cerebellum. Incontinence of urine and feces have also been noted, but this condition often results when a cerebral tumor has advanced to such a point, or the suffering of the patient has become so great that his mind is obtunded. Incontinence is not at all characteristic of a cerebellar lesion.

Tumors of the cerebellum occasionally may need to be differentiated from prefrontal growths. Mills has considered this feature and states that the diagnosis is difficult only when the tumor is confined to the external portion of one lateral lobe so that the symptoms given, such as ataxia and nystagmus, are not marked, or are not present at all. Concerning the so-called frontal ataxia that has been described by Von Bruns, Mills has come to the conclusion that the symptom is of doubtful existence as a true ataxia; he believes that it is probably a pseudo-ataxia due to the impaired mentality of the patient in consequence of which his powers of

attention and inhibition are so affected that he does not govern his movements quite normally.

When a prefrontal growth is situated on the left, mental symptoms of a distinctive character are present, these being absent in cerebellar lesions. The cerebellar patient, as stated by Mills, is often feeble in pursuing his mental processes, which, however, are in themselves quite clear. If the prefrontal tumor involves backward, aphasia, agraphia, and unilateral motor paralysis may ensue. As previously stated, disorders of ocular movements—especially of associated movements—are among the most frequent symptoms of cerebellar disease.

Neural symptoms, when present, are of diagnostic value. Neural symptoms are due to pressure or invasion by the tumor being situated toward the inferior surface of the cerebellum. These symptoms may be referable to any of the cranial nerves, or their connections, from the third to the twelfth. Perhaps, the most common are those indicating paresis or paralysis of associated ocular movements (as previously referred to); paresis of the musculature supplied by the sixth or seventh nerves; impairment of hearing from implication of the cochlear portion of the eighth; disorders of taste due to involvement of the glossopharyngeal or chorda tympani; loss or perversion of sensation because of trigeminal disturbances.

When the neural symptoms are due to pressure, they are probably usually to be referred to direct nerve or nerve-route involvement (Mills). It has been found that unilateral symptoms are not always due to true nerve implication, since a cerebellar tumor may involve jointly one lobe, one peduncle, one side of the medulla oblongata, or pores.

Unilateral differences in the deep reflexes may be of corroborative value when the question of the side on which the tumor is situated is being considered. In one of Mills' cases the knee-jerk was exaggerated on the side opposite to that on which the tumor was presumably situated, probably because the neoplasm exerted pressure downward on the pyramidal tract before its decussation. The superficial reflexes are usually unchanged in tumor of the cerebellum.

Cerebellar abscess is frequently more difficult to diagnose than abscess of the temporal lobe. In both there is usually a history of chronic otitis. The symptoms induced by an incipient sinus-thrombosis and epidural suppuration tend to obscure the diagnosis of the cerebellar lesion. The charac-

teristic symptoms of cerebellar growth are frequently entirely wanting in cerebellar abscess. In fact, almost one hemisphere may be practically destroyed by the abscess formation without any clinical manifestations characteristic of cerebellar lesion. Von Bergmann has gone so far as to acknowledge that the diagnosis will usually be made after the transverse sinus has been exposed to the eye, and one has an opportunity to observe in which direction the suppurative process has extended. We have found that disease in the right ear is more frequently followed by cerebellar abscess than when the lesion occurs in the left ear.

PROGNOSIS.

The prognosis of cerebellar tumor is grave. Woolsly³⁹ has recently stated that all cases of brain-tumor of whatever origin are necessarily fatal. Surgery has, however, changed the prognosis quite favorably. In fact, the prognosis may be said to depend upon the site, size, character, and rapidity of the growth, of the tumor, as well as the time of diagnosis and the treatment. In gummata the prognosis is somewhat more favorable than in some of the other lesions. Edmunds and Lawford suggest that cerebellar tumors are not so rapidly fatal as basal growths. Mills holds that the success both in diagnosis and in operative treatment of tumors of the cerebrum, especially those located on the lateral aspect, will reach 25 to 50 per cent. When the tumor is situated in one lateral lobe of the cerebellum; or in tumors of the cerebellopontile angle the chances for successful removal are fairly good. Spiller has called attention to the fact that in general sarcomatosis the case is beyond surgical intervention. Early diagnosis and early surgical intervention offer the best prognosis in suitable cases.

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(To be Continued.)

LEADING ARTICLES.

LOOKING BACK.

By EDMUND A. BABLER, M.D., St. Louis.

In carefully looking over the vast amount of medical literature presented during the year just closed we frequently note a trace of the far-reaching beneficial influences of the International Congress of Arts and Sciences which convened during the Louisiana Purchase Exposition. That the Congress was a great stimulus to medical research can not be doubted. It is, indeed, very gratifying to see how the patient workers throughout the entire civilized world are toiling to discover means and methods of successfully preventing and curing disease. It is our present desire to present a few of the many lines of thought which have commanded the attention of these experienced and painstaking observers, as well as to tabulate some of the accomplishments of the year.

The true etiology of cancer remains an unsettled question, even though very extensive researches have been made to elucidate the subject. Von Leyden and others continue to favor the parasitic theory, while Orth announces in emphatic terms his adherence to the cellular theory. He believes that if parasites are present they are intracellular and play a secondary, and not the chief rôle as an etiologic factor. The Harvard Commission tends to attribute cancer to inherent changes in the epithelial cells, rather than to the presence of parasites. Farmer, Moore and Walker found that in the very earliest stages of cancer there is a peculiar behavior of the leukocytes. Immediately within the zone of transition from the normal to the cancerous elements the leukocytic crowding was most strikingly apparent. Neither the leukocytes nor the invaded tissue cell appeared to be affected injuriously. A complete disturbance of the normal chromosome constituents of the cell was noted. Von Bergmann has never observed primary carcinoma of the extremities without a preceding cutaneous lesion, scar, wart, fistula opening, ulcer, eczema or mole. The one important factor in

the treatment of cancer is early removal. A suspicious tumor, or one likely to become cancerous should not be permitted to grow. The findings of Wertheim and of Hanley are recorded elsewhere.

The Japanese have taught us several lessons in military surgery. The value of donning clean wearing apparel before an engagement is clearly demonstrated. The importance of conducting warfare as conducted by the Japanese is evident. Epidemics of typhoid fever were prevented, and special attention to details was carefully arranged.

A scourge that destroys 100,000 human lives a month is certainly worthy of the most careful consideration. The plague in India is now receiving the attention of the British government. It is to be hoped that the plans formulated will be found sufficient to change India from a land of suffering to one of gladness and health.

The recent epidemic of yellow fever in the South clearly demonstrated the necessity of proper protection against the mosquito, and the inefficiency of shotgun quarantine. Every case should be reported immediately and the patient properly protected against the mosquito.

Tuberculosis.—The findings of the committee appointed by the German Imperial Board of Health corroborate the assertion that the human body is capable of infection from the secretions, excretions, or meat of tuberculous domestic animals. Bovine tubercle bacilli cultivated from human lesions show no differences from those cultivated directly from cattle. It is impossible to inoculate cattle with human tuberculosis. When man has bovine tuberculosis it is possible to infect animals. Harbitz believes that in the great majority of the cases of pulmonary tuberculosis occurring in children, infection takes place from the lymph nodes; the latter may be infected in many ways. He contends that there is no certain relation between the point of entrance of the infection and the point of development of the disease. Wood is of the opinion that in the great majority of the cases infection of the lungs takes place through the air and not through the blood. Many agree that more stress should be laid on primary infection through the digestive tract and through the throat than has been done heretofore. The year's findings in general tend to but strengthen the belief that the attitude taken by the American medical profession should be continued. It is probable that bovine tuberculosis does not occur as frequently in childhood as Behring contends. It is true that congenital tuberculosis occurs more frequently than many have deemed possible.

Tuberculin.—Mérieux advises injecting blood serum, urine, expectorated blood, etc., from a tuberculous person into a tuberculous guinea pig; he has found that this reversing of the usual technic is a very reliable test; no reaction occurs when the patient from whom the injected material was secured is not tuberculous. Baer and Kennard find that tuberculin properly employed enables us to make an earlier and more positive diagnosis in orthopedic surgery than is secured by the Roentgen ray. Belgium and Holland are using tuberculin very extensively at present. Spiegler continues to hold that the immunization obtained with his *perlsucht* tuberculin is a true, natural immunization. Experience is necessary to obtain good results. Pearson announces that a method of vaccinating cattle against tuberculosis has been carried out successfully. Von Behring announces that the discovery of the essential element in the immunizing action of the vaccine with which he had been successfully combating bovine tuberculosis is a present day fact. We deplore his action in withholding the fruits of his research for two more years from suffering humanity. Laffont combines a tuberculin produced by a new technic with an artificial tonic serum. Each cc. contains 0.5 mg. of dimethoxylated strychnin.

Marmorek's Serum.—Is being extensively used in Sweden. Basano finds that the serum yields the best results in surgical tuberculosis. Richer has secured good results in 7 advanced and 9 incipient cases of tuberculosis; no untoward results have been noted. Marmorek has notes on 400 cases of tuberculosis treated with his serum; in none of the cases was there any untoward result; in more than 100 cases cures were obtained.

Diazo Reaction.—Widstrand's findings indicate that the diazo reaction is of value in tuberculosis; he finds that in the mild or chronically latent cases the reaction is almost invariably negative. Holmgren confirms these conclusions. The stronger the reaction the nearer the hour of death. He believes that a single positive reaction is sufficient for these deductions. Budden holds that the reaction is of no prognostic value in tuberculosis. In view of the frequency of the intermissions we can not say that any case is negative unless it has been tested constantly for long periods; a single positive finding frequently indicates a fatal issue.

Pneumonia.—Considerable attention has been given to this sub-

ject. Butler considers the diminution in the respiratory murmur over the affected lung, especially noted in the first 24 or 48 hours, to be a very important physical sign in pneumonia in infancy. Roberts and Tyson favor dry cupping in the incipient stage of the disease; cold applications reduce the temperature and cause deep inspirations; ice cloths should be removed when the temperature registers 100°F. Ewart condemns the expectant plan of treatment; he advises diaphoresis, ant fibrinosis and absorptive treatment; ammonium citrate and sweet spirits of niter are employed to keep the eliminative organs in good condition; he gives large doses of potassium iodid throughout the attack. It is needless to say that the bowels must be kept open. Galbraith advocates quinin and iron. An initial dose of 50 grains of quinin followed by 30 grain doses of quinin every two or three hours are administered; iron is also given; he reports over 50 cases so treated without a death. Pool, Ramsey and others record similar results with this treatment. It is certainly surprising to learn what quantities of quinin can be given beneficially. The report of the New York Commission has added much to our knowledge concerning the bacteriology of the disease. Fresh air is a primary requisite in the treatment of pneumonia. The serum treatment has not proven satisfactory. Osler finds that the only safeguard to prevent error in mistaking cases of acute tuberculous pneumonia for those of simple pneumonia is a careful, systematic and routine examination of the sputum—daily examinations when possible. Whenever the course deviates from the normal the practitioner should have the patient's sputum examined. It is often very difficult to make a differential diagnosis between this affection and typhoid fever. Osler is confident that many of the cases in which tuberculosis follows a pneumonia are in reality cases of the above affection.

Pericarditis.—Fitz calls attention to the value of puncturing the pericardium through the right xiphocostal angle in cases suspected to be suffering with pericarditis with effusion. If fluid is not obtained and the symptoms indicate its presence, puncture may be followed by incision: in this way may be reached fluid not otherwise obtained, because it is behind the heart. Osler has found this method very efficacious. Bacon employs a trephine opening made opposite to the fifth intercostal space between the midsternal line and the left border of the sternum. The superiority of Fitz's method is apparent.

Antityphoid Inoculation.—Kolle's experience confirms the assumption that the power to elicit the production of bacteriolysins does not parallel the virulence, but it parallels the capacity of the culture to bind the specific amboceptors of a serum *in vitro*. The immunizing effect of these inoculations depends to a great extent on the special culture. Bassinge and Mayer find that the germ-free filtrate obtained by shaking living typhoid bacilli in distilled water and filtering, possesses a high immunizing power. No person should be inoculated who has not been ascertained to be in a sound state of health; it is also necessary that the material to be inoculated is free from living bacilli or other injurious material. Musehold and Stendel find that the first inoculation should not contain more than one loopful of dead typhoid culture. The Germans and the English are trying to protect their soldiers by means of antityphoid inoculations; in many instances good results have been secured.

Cerebrospinal Fever.—Several severe epidemics of this affection have appeared both at home and abroad during the year just closed, more than 4000 cases having been reported, the mortality being about 70 per cent. Park and Boldman, and others conclude that the meningococci are spread by discharges from the nose and mouth of the sick, and those in immediate contact with them. It is the present opinion of Tyson and others that the disease is to a certain extent contagious. Diphtheria antitoxin has been used in various ways in these cases, but no form of treatment has been found satisfactory. Lumbar puncture should be performed when practicable. Stockton believes sanitation to be more useful than therapeutics; he has found antipyrin useful. Two prominent and painstaking physicians lost their life during the past year while trying to be of some service to patients suffering with the disease.

Diabetes.—Curtis desires to place the etiology of diabetes at the door of syphilis and he advocates antisyphilitic treatment. Joslin contends that rest is just as important to the diabetic as it is to the patient with gastric ulcer; rest is secured by restricting carbohydrates; fat is very essential and must be given in increasing doses; drugs are not recommended; acidosis is counteracted with bicarbonate of soda; when signs of coma appear he administers the latter drug with a definite quantity of milk. Fitcher finds that there are no constant anatomic findings in diabetes insipidus.

Leukemia—Schaeffer regards leukemia to be of the nature of a systemic sarcomatosis of the lymph and blood producing organs, and not of infectious origin. The permanent results obtained by Roentgen therapy have not been satisfactory. Edsall believes that the effect of the rays in this affection is a reaction of the individual and not the direct action of the ray itself; the most probable explanation is that the autolytic processes of the body are stimulated; the results indicate that the process is comparable to resolution in pneumonia. In reviewing the literature I have not found a case permanently cured by means of the rays. The appropriate remedy has not yet been presented. The blood of patients treated with Roentgen rays tends to return to the leukemic picture as soon as the treatment is discontinued, but many cases are temporarily benefited by the rays.

Arteriosclerosis.—Romberg believes that nervous disorders may be an important cause. Mackenzie contends that angina pectoris will be found to be an evidence of the impairment of the function of contractility of the cardiac fibers. In slight cases in which there is cardiac weakness Romberg treats the angina with digitalis; in recurring nocturnal cardiac asthma he administers camphor and a narcotic; he regards morphin as contraindicated. For the general treatment of arteriosclerosis he favors potassium iodid. The habits of the patient must be regulated; plenty of fluid must be taken and the bowels kept open. Broadbent says that the distinguishing character of true angina pectoris is that it is induced by exertion. The nitrites are of more value during the interval than during an attack.

Albuminuria.—Our knowledge concerning the significance of albuminuria remains somewhat unsatisfactory. Fürbringer believes that cyclic albuminuria is always of pathologic origin and may be the manifestation of an insidious nephritis. Hyde agrees that physiologic albuminuria does not exist. Von Leube feels confident that some varieties of the so called physiologic albuminuria are due to congenital relative porosity of the filtering membrane of the glomeruli. The albuminuria of puberty is due either to defective or to excessive development which regulates itself later. Schreiber finds that direct palpation of a wandering kidney invariably causes a marked albuminuria, he suggests that this fact may be of diagnostic value in differentiating a wandering kidney from an abdominal tumor. Dukes has noted that many of the patients exhibiting albuminuria during adolescence also

exhibit increased arterial tension. Proper treatment will eliminate the danger of subsequent nephritis. The profession are beginning to regard the so called physiologic albuminuria with great suspicion.

Nephritis.—Widal and Javal conclude that chlorids and urea may be retained in the organism together or separately in cases of Bright's disease; symptoms and treatment are different in each case. Lactose should be administered when urea is in excess; milk is contraindicated in these cases, since it contains too much albumin. They believe that the value of milk lies in the fact that it contains very little salt. Page and Dordelin contend that a maceration of fresh pig's kidneys is the most certain and powerful weapon at our disposal in fighting with nephritis. Beaujard and others have confirmed the findings of Widal and Javal. Beaujard has become convinced that in interstitial nephritis there is a "dry retention of chlorids," while in epithelial nephritis there is a retention of fluids also. Richten believes that the reason that a salt free diet is of such value in certain forms of nephritis is due to the fact that the subject does not drink so much water. In passing, I would mention the fact that Olmer and Audibert have found that the dechloridation treatment is of value in treating ascites due to hepatic cirrhosis; the result, however, is only temporary.

Gastric Affections.—Sahli estimates the natural digestive processes under natural conditions by administering, after a regular meal, .05 gram methylene blue and .1 gram of iodoform, with extract and pulverized licorice, of each, .04 gram, in a piece of rubber dam tied with a piece of catgut. He contends that this so called "desmoid reaction" will be found of great value. Musser has secured excellent results in treating cases of hyperchlorhydria, especially those secondary to neurasthenia, which do not yield to ordinary treatment, with increasing doses of *nux vomica*; it must be given before meals and for a long time; strychnin must not be employed. Von Tabora calls attention to the finding of small, black clots of blood secured by siphoning the stomach, he believes that they are the very earliest symptoms of gastric cancer, in his experience preceding the discovery of lactic acid; the clots are less than the head of a pin in size and may require the microscope to find them. McIntosh believes that in many instances the diagnosis hinges on changes in the constituents of the stomach content as revealed by weekly examination of the latter; if there is no substantial change the diagnosis is benign pyloric stenosis; a progressive

decrease in hydrochloric acid and the development of lactic acid, with weakened albumin digestion, indicate cancer. Vanstenberghe and Breton have found that in gastric cancer the blood (if examined after a meal) will show a relative increase of the mononuclear elements. There is a difference in the character of the digestion leukocytosis as compared with that due to the normal daily range.

Noever has observed that the ordinary means for combating hyperacidity are inefficient when the latter is due to cancer of the stomach. Pitt has called attention to the very important finding that the gland situated behind the lower roots of the sternomastoid muscle is the only external gland involved in abdominal cancer. In more than half the cases it is indicative of primary gastric disease.

Reidel has asserted that pain in the epigastric region to the left side of the median line is characteristic of an ulcerative process in the middle segment of the stomach. One of the burning questions of the day is the treatment of gastric ulcer; men of widest experience agree that medical treatment should first be employed. Shattuck is of the opinion that the only conditions in connection with ulcer of the stomach which call for surgical intervention are perforation, and obstinate cicatricial contraction of the pylorus; he administers large doses of bismuth. Mayo has found that operation is less useful in unhealed ulcer than in strictures following the healing of an ulcer. Hartmann prefers to limit surgery to those cases of ulcer accompanied with mechanical troubles and those presenting the pyloric syndrome.

Laucereaux emphasizes the fact that gastric tetany should be suspected when peristaltism associated with vomiting persistently occurs in a subject whose appetite is maintained and whose general health is not such as to indicate an advanced stage of cancerous disease. In these cases the patient should be referred to the surgeon.

Duodenal Ulcer.—D'Arcy Powers has advanced our knowledge concerning this affection. In perforative cases the patient has heretofore considered himself to be in perfect health; without warning he is suddenly seized with a stomachache of such severity that he becomes collapsed and sends at once for assistance; he may vomit, but from the onset of the pain he passes neither gas nor feces; he lies upon his back, afraid to move; breathing is shallow and rapid; the pulse small, regular and quick; muscular rigidity and tenderness are pronounced. The diagnosis rests on the previous history, the sudden onset, the age

of the patient, the character of the respiration and the general findings. In non perforative cases the diagnosis is often very difficult. Eccles believes that if an anemic young man has had an attack of melena it may clear up the diagnosis. In Osler's experience the occurrence of sudden intestinal hemorrhage with gastralgic attacks, is extremely suggestive of duodenal ulcer. Powers emphasizes the emaciation, the long continued suffering, the frequent attacks of copious vomiting, the character and time of the attacks, and the avoidance of food because it produces subsequent suffering.

Amebiasis.—The extensive work of Musgrave has advanced our knowledge concerning this affection, he emphasizes the fact that the diagnosis must be based upon microscopical examination of the feces. Physicians should not wait for bloody stools to appear before a diagnosis is made; the odor of the bowel actions and the presence or absence of blood must be considered; early treatment avoids the danger of subsequent hepatic abscess.

Kidney Functioning.—Rovsing considers the determination of the proportion of urea to be the most simple and most reliable of the various functional tests. Cryoscopy of the urine is regarded useless; catheterization of the ureters is always necessary. Robertson believes that the determination of the freezing point of the urine from each kidney and the percentage of sugar in the urine from each kidney after the injection of phloridizin, give the most valuable information as to the existence of disease on the one side and of kidney sufficiency on the other.

New Disease.—Dunn and Gordon describe a new disease occurring in England; the clinical and bacteriological aspect of the affection, which appears in epidemic form, closely resembles influenza.

Hay Fever.—Mohr has presented a device to keep out the pollen dust. That the present treatment of this disease is not satisfactory is evidenced by his assertion that "flight to a place where the pollen production has not yet begun or is past or is always scanty, is the best means to avoid the disease in those predisposed." Theisen has found Dunbar's serum effective in relieving the sneezing and the eye symptoms. Loeb has had fair results but acknowledges that enthusiasm is a part of the Dunbar treatment. In some instances the serum aggravates the condition. Prausnitz claims to have secured good results with the serum.

Hyperplasia of the Respiratory Mucosa.—Semon describes a form of chronic hyperplasia of the mucous membrane of the nasopharynx, pharynx and larynx. The process is progressive and there is a tendency toward degeneration. The histologic changes approach most nearly to those met with in hyperplastic rhinitis in what has been designated its secondary stage. In 3 of the 8 reported cases the cause was found to be tuberculosis.

Adenoids.—McCollom has called attention to the very important fact that the nasal secretions should be carefully examined for the presence of Klebs-Loeffler bacilli before doing an adenectomy. He has observed several cases in which diphtheria followed the operation. Dench has also found that this very important test should never be omitted.

Diphtheria.—The assertion that 500 units of antitoxin administered every three weeks to children confined in hospitals will prevent the occurrence of diphtheria in the latter has been fully verified. It has been found that antitoxin should be given whenever the physician suspects that the patient has diphtheria. The great danger lies in giving the serum too late or in insufficient quantity. McCollom finds that 4000, 6000 or 8000 units should be given every four to eight hours until decided improvement is noted. Whenever there is evidences of extension to the bronchus he advises 2000, 3000 or 4000 units every few hours. Intubation is preferable to tracheotomy. It is very important to guard every patient against sudden cardiac failure, and the patient must not be permitted to get up too soon. Rolleston advises adrenalin as a prophylactic; strychnin is unavailing.

Duke's Disease.—Edson regards this affection as a rubella morbiliforme. he has observed 64 cases; it differs from other affections in that it is accompanied by little or no fever, no coryza, no glandular enlargement, no pruritis, no increase in pulse or respiration and there being no complications and no sequelæ. Bokay has found that an attack of scarlet fever does not protect against Duke's disease, or vice versa. Practitioners in general regard this affection as a distinct disease, as stated by Duke.

Congenital Pyloric Stenosis.—It is evident that many cases are described that are not really the disease; the true etiology remains obscure. Still contends that the hypertrophy may be merely a secondary phenomenon. Saunders found that non-neoplastic and non-cica-

tricial pyloric stenosis may be found at all ages except at birth and the period immediately thereafter. The forcible character of the vomiting, its occurrence in an infant who has been carefully fed and its persistence in spite of such alterations of feeding and such general treatment as will usually control the vomiting of dyspeptic conditions, are regarded by Still to be suggestive of pyloric stenosis. Holt and Rotch are convinced that the peristaltic wave is not as constant or diagnostic as is generally supposed. Scudder very much doubts the permanency of the cure in cases treated medicinally; at any rate, many agree that medical treatment should not be too prolonged. Robson says that 80 per cent die unless operated upon.

Infantile Intestinal Infection.—Tissier has found that the *Bacillus perfringens* possesses powerful fermentative action and that it is responsible for the protracted course, the foamy, offensive stools and other symptoms in these cases; he suppresses the albuminoids and administers glucose, saccharose, lactose, starch or other carbohydrates instead. Before each meal the child is given a tablespoonful of a 10 per cent solution of lactose; each day one or two teaspoonfuls of a pure culture of *B. acidiporalactici*, which has been kept in an incubator for five or six days, peptonized milk or maternalized milk should be gradually added to the diet. Salage believes that in severe cases of intestinal infection the heart should be protected and that the milk must not contain too much fat. I might add that Holt has called attention to the fact that infantile convulsions are sometimes due to too much fat in the food.

Birth Palsy.—Kennerly's findings are being fully corroborated. In many instances brachial birth palsy can be prevented. Overstretching is the chief cause. When the paralysis persists for a year or less there is but one thing to do and that is to remove the cicatrix and to place the nerve ends in apposition.

Premature Infants.—Zahorsky is of the opinion that the whole function of the incubator is to lessen the heat loss from the premature baby. Any method adopted to meet the exigencies of the case, according to the conditions present, which maintain the rectal temperature between 98 and 100° succeeds in doing all that an incubator can do. Zahorsky finds that the most difficult task in rearing premature infants is not the prevention of heat loss but maintenance of a proper nutrition. When a child is too hot it becomes cyanotic. He believes that a child does better on a low temperature.

Early Signs of Pregnancy.—By continuing auscultation for from 20 to 30 minutes Sarwey has been able to detect the fetal heart sounds before the 18th week. Herff contends that if a questionable tumor feels very hard at one time and then remarkably soft—doughy, at another, it can be nothing but a gravid uterus. A more rapid increase in the size than that of a normal pregnancy indicates an acute hydramnion or vesicular mole. He has examined 30,000 women and only in a single instance did the characteristic patches in the vagina occur in a non pregnant patient. Weissenberg calls attention to the difference in the consistency of the two halves of the uterus in the first months of pregnancy.

Toxemia of Pregnancy.—Williams believes that there are two forms of this affection, one giving rise to pernicious vomiting and acute yellow atrophy, and the other to eclampsia. His researches convince him that a marked increase in the percentage of the urinary nitrogen excreted as ammonia indicates the existence of a serious toxemia, which, if allowed to continue, will bring about lesions in the liver and other organs inconsistent with life. When the ammonia output reaches 10 per cent immediate interference is demanded.

Eclampsia.—The etiology and treatment of eclampsia remain an unsettled question. Schmorl advances the theory that eclampsia is an intoxication of placental origin. The results obtained by rapid evacuation of the uterus do not bear out this contention. Whether the physician should induce labor in these cases remains *one of the most* important questions of the present time. Boxall concurs in the belief that eclampsia is a degenerative and not an inflammatory process. He denounces pilocarpin. Tweedy advocates the placing of the patient in such a position that fluids in the air passages will easily escape through the mouth. English physicians treat these cases, in many instances at least, with morphin and induction of labor. In America, veratrum viride is strongly indorsed; many evacuate the uterus and administer the latter drug freely.

Accouchment Forcé—In grave forms of placenta previa and of accidental hemorrhage Norris advocates Dührssen's hysterectomy, provided the operator be experienced in vaginal work. The character of the indications for the induction of labor and the condition of the patient are factors determining the method to be employed. Hirst strongly advocates bougies. Fry, Bumm and others favor vaginal

section in operations necessitating rapid emptying of uterine contents. Bumm favors vaginal hysterectomy; he recommends neither Bossi's dilator nor vaginal hysterectomy to the general practitioner.

Symphiseotomy.—Van Canvenberghe simplifies and lessens the dangers of Gilgi's median operation by sawing the bone aside from the median line on the side where the head presents, or will present after version. The bladder and urethra retain their support along the median line. Separation to a distance of 4 cm. does not entail laceration of the capsule of articulation. Separation of 3 cm. increases the conjugate 1, the transverse 1.4 and the oblique 1 8 cm.

Beriberi.—Wright's findings indicate that what has been called beriberi is not the disease at all but merely one of the symptoms—neuritis, with its sequels; he contends that it is an acute infectious disease with a primary lesion in the mucosa of the duodenum. The pyloric end of the stomach and various parts of the intestines may be invaded. The toxins of the bacillus act atrophically on the peripheral terminations of the afferent and efferent neurons. Incubation period varies from ten days to several weeks; the active stage of the organism is between three and four weeks. Wright finds no connection between the disease and dietetic errors. Cleanliness is the watchword. It has been suggested that the bacillus responsible for beriberi may show a relationship to the Klebs-Loeffler bacillus. At the end of three or four weeks the organisms disappear from the body, hence chronic cases are not carriers of the disease.

Laundry's Paralysis.—Cases of ascending paralysis are regarded as examples of this affection. Walder has reported 3 cases of acute ascending paralysis due to a chronic cystitis. Heretofore, cystitis has never been regarded as an etiological factor of this affection. In Walker's patients the paralysis began suddenly in the lower limbs. Death occurred in 2 cases in 18 hours, and in one case in 48 hours after the onset of the paralysis; this is a very important finding.

Paralysis of the Peroneal Nerve.—Hirschfeld describes a hitherto unknown phenomenon of paresis of the peroneal nerve. It consists in a decreased ability of the patient to flex the foot dorsally. The phenomenon is explained by the anatomic conditions. By means of this sign it is possible to observe variations in the degree of the paresis and the effect of the treatment followed. Hirschfeld lays stress upon the finding.

Tabetic Foot.—A new method directed toward the correction of the gait in locomotor ataxia by mechanical means has been advanced by Schwab and Allison. A specially constructed shoe is employed to counteract the pronation of the foot. In 15 reported cases the results have been quite good.

Epilepsy.—Turner believes that the scientific treatment of this affection should consist in more than an endeavor to subdue the convulsions by drugs; if benefit does not follow daily doses of from 45 to 60 grains of one, or a combination of the bromid salts, some other remedy should be sought. Congenial employment, hygienic modes of life, salt starvation diet, and suitable amusements are essential. Collins found that a salt free diet resulted in a reduction of 38 per cent in the frequency and severity of epileptic attacks. Morton believes that the hypochlorization method controls the convulsions; it has no effect on the general nutrition. It is certainly advisable to give hypochlorization a trial.

Paresis.—Dana regards paresis to be of luetic origin, he contends that in the very earliest stages it can be arrested or cured. Clark does not believe that an early diagnosis has been proved possible. It is possible that Schaudinn's findings will be of value in clearing up the etiology and making an early diagnosis possible. In passing, I might add that Severino has found that loss of the Achilles tendon reflex and a relative increase of the small lymphocytes in the cerebrospinal fluid obtained by lumbar puncture, are among the earliest signs of tabes.

New Sign in Hemiplegia.—Grasset and Gansel describe a new sign of organic paralysis of the lower extremity, consisting in the possibility of raising the paralyzed limb separately; with impossibility of raising both limbs simultaneously. They contend that this is to be considered a proof of insufficiency of pelvic fixation in the act of raising the lower limbs, and is frequently observed in the organic palsies of the lower extremities, more especially in hemiplegia.

Cerebellar Tumors.—The fact that escape of cerebrospinal fluid from the nares may indicate a cerebellar growth must not be forgotten. Mills has never observed a case of cerebellar growth in which there was not some grade of ataxia present. DeSchweinitz has never seen a case in which optic neuritis was unilateral, although he has observed that at times the choked disc might be more severe on one side than on the other. When engorgement edema is the marked feature, the

ophthalmoscope reveals the typical picture of choked disc; when the inflammatory condition prevails, an inflammatory optic neuritis.

New Test-Types.—The French Ophthalmological Society has adopted the test-type made according to the geometric progression first proposed by John Green. The series of letters is more complete, with equal intervals between the different lines of letters, but preserving most of the Snellen lines and the shape of the Snellen letters.

Pterygium.—Sachs alber considers pterygium due to irritation from fine hairs on the inside of the lid. In all of his cases success was obtained by removing the hairs. He teaches the patient how to remove them and requests them to do so each week.

Entropion.—Lagleyze has devised a very simple and successful technic. Under local anesthesia he inserts the required number of needles into the conjunctiva at the level of the tarsal superior border, slipping them between the fibrocartilage and the skin so that they traverse the cellular tissue and orbicular muscle and come out through the free palpebral border at the level of the angle of implantation of the lashes. The needles are disposed so as to form a picture like that in Critchett's amputation. A good result depends principally on a good division of the tarsus. The advantage of the suture employed is due to the fact that the loops are successive without solution of continuity, thus obtaining a number of loops equal to the number of needles employed, less one. The angle left by the incision forms a wedge which cicatrizes by second intention, filling the tissues with a new growth, and the length of the threads which maintain the corrective incurvation produces cicatricial lines which assist in the definite curve of the entropion. The operation is of advantage in trichiasis.

•**Rabies.**—The findings of Poor, Bertarelli, Able and Bormans, and others tend to but confirm Negri's contentions. Poor agrees that the bodies are the essential factors in the production of rabies. Bertarelli holds that the bodies can not be produced by artificial means. They are found chiefly as cell inclusions in the Purkinje cells of the cerebrum and in the large ganglion cells in the region of the hippocampus major. In more than 1000 tests Bertarelli was unable to detect the bodies in animals free from rabies. He assumes that the bodies are of a protozoon nature. Volpius stains the section with a 10 per cent solution of osmic acid. An eosin-methylene blue combination has also been presented. Valenti has recently demonstrated that quinin

will neutralize the virus of rabies in the test tube and in the living subject. Tizzoni and Bongiovanni find that application of radium rays to the eye of rabbits injected with fixed virus prevents the development of rabies and may even cure animals in which active symptoms of the disease have appeared. In rabid animals so treated the nervous symptoms subside first, followed by recession of the fever and loss of weight. Valuable findings are anticipated.

Smallpox.—DeKorté demonstrated the presence of unicellular elements in the vesicular contents from the pocks of smallpox, variella and vaccinia respectively. These bodies can be grown in pure culture on a suitable medium. The organism is a spherical body 1 micron in diameter, and contains a large centrally located nucleus. The latter is for the most part hidden by small, very refractile granules, which are considered to be spores. The lymph must be collected from the vesicles of the several diseases and put up in hanging drop preparations. Councilman finds that vaccinia differs from smallpox in three striking ways: 1, The incubation period is shorter; 2, there is no general exanthem; 3, for the development of vaccinia it is necessary that the virus be placed in contact with a susceptible epithelial surface. Many fundamental questions relating to smallpox remain unanswered. Vaccination continues to be the ideal preventative treatment. Mendonca claims to have isolated a bacillus from smallpox pustules. He calls it the bacillus V. It is quite virulent.

Yellow Fever.—Carroll believes that the crucial point is that the diagnosis must be anticipated and the proper precautionary measures be taken before the disease has fully declared itself. Guiteras holds that the high percentage of hemaglobin found in the blood of yellow fever cases is an important differential diagnostic point between this disease and affections frequently confounded with it. The diazo reaction is never present in uncomplicated cases of yellow fever. In yellow fever the quantity of albumin found in the urine is out of all proportion to the other symptoms present. Pothier and others call attention to certain cells which they found in the blood of patients suffering with yellow fever. The cells are extracellular, though occasionally some are found lying on the red cells. They occur, as a rule, alone. Size varies from twice the diameter of a pneumococcus to one-fourth that of a red cell. Shape may be ovoid or spherical. Stained specimen shows highly granular neutrophilic protoplasm sur-

rounding a nucleus which contains chromatic granules. The protoplasm is limited by a capsule. Further findings are necessary.

Schistosoma Cattoi.—Catto describes a schistosoma found in the mesenteric vessels and parts of the alimentary tract of a Chinaman who died of cholera. The male is 9 mm. long, less than 5 mm. broad, and of a light-brown, yellow color, closely resembling those of *S. hematobium*. The female lies in the gynecophoric canal. The habitat of the new *S.* is mainly arterial. The ova apparently exclusively affect the alimentary system, escaping by this route from their human host. The parent worms may completely plug the blood vessel. They are found in small groups at the bifurcation of the small mesenteric vessels. Catto found that the ova closely resembles those of *ankylostoma duodenale*. Stiles believes that the new blood fluke may be identified with a fluke described for man and cats in Japan. Katsurada describes a disease in which he found the eggs of a trematode in the liver and stools. Diarrhea was the first symptom observed.

New Type of Parasite.—Smith has observed a new type of parasite in pernicious malaria. He describes it as being a small hyalin disc of an oval spindle form, non-pigmented, and found lying in the protoplasm of the red blood corpuscles. It possesses a very sharply defined outline; highly refractive, and in the center of each form is a small bit of hemoglobin. The short diameter varies from $1/5$ to $1/10$ the diameter of a red blood cell; the length being about twice as great. No ameboid motion was noted. It stains with great difficulty. It was present in 119 cases of pernicious malaria.

Improved Microscopic Technic.—By means of Widerhake's new and simple technic a microscopic diagnosis can be made in five minutes. A fresh frozen section is immediately placed in tincture of iodine (2 to 5 drops in 20 cc. of water), then transferred, without rinsing, to a 20 per cent dilution of a stain made by dissolving crocein scarlet 7 B in 10 cc. of 70 per cent alcohol until the alcohol will not dissolve any more; after leaving the specimen in the stain for from $1/2$ to 3 or perhaps 5 minutes, it is soaked in water for a minute or so, it is mounted in glycerin.

Experimental Measles.—Hektoen has succeeded in producing measles in two patients by inoculation. He concludes that the virus of measles is present in the blood of patients with measles, sometime at least during the first thirty hours of the eruption. He believes

that the virus retains its virulence for at least twenty-four hours, when such blood is inoculated into ascites broth and kept at 37°C.

The Opsonins—The true value of the test from a clinical standpoint has not been fully determined. Urwick has found that the opsonic power varies greatly in degree in tuberculous patients. The degree of the opsonic power is ascertained by calculating the phagocytic index. (See ST. LOUIS COURIER OF MEDICINE, November, 1915, page 283).

Tick Fever.—Stiles' investigations have tended to cause doubt as to the etiology of spotted fever. His findings do not support the view that the disease is due to a pyroplasma. In 5 of his 10 cases he was unable to establish a history of tick bite. His work has not thrown much light on the preventive treatment or other methods of combating the disease.

Leprosy.—Carrasquilla believes that leprosy is infectious and that the infection is transmitted by vermin. Hutchinson clings to the fish theory. Bey and others regard chaulmugra oil to be the only valuable internal remedy producing satisfactory results in this disease. Strychnin is a *sine qua non* in the treatment, according to Dyer. Rost's leprolin theory has been exploded. Semple and Rost have found that the preparation of leprolin is a present-day impossibility.

Sclavo's Serum.—Legg and others have obtained excellent results with the serum. Andrews and others consider it unnecessary to excise the pustule, relying on the efficacy of the serum. It seems best, however, to excise the pustule when possible. The serum causes a temporary increase in the amount of edema. A case of anthrax has followed the eating of infected meat. At the present time Sclavo's serum is being used quite extensively in England, and during a recent discussion of the subject it was acknowledged advisable to excise the pustule when possible. The initial injection is 40 cc. In one case reported in England the serum failed to arrest the course of the disease.

Aggressin—Bail presents a new theory. He has found that tuberculous exudate contains a something which, when injected into a guinea pig, allows tubercle bacilli to become more aggressive. He believes that this substance is an endotoxin liberated from the bacteria as a result of bacteriolysis, and that it acts by paralyzing the polynuclear leukocytes, thus preventing phagocytosis. Heating of the exudate tends to increase the strength of this substance which he calls aggress-

sin. Bail has prepared an antiaggressin serum which enables the leucocytes to surround and devour the bacteria. Pirquet and Schick contend that it is not necessary to assume the presence of "aggressin." They conclude that all the findings observed by Bail can be explained by the formation of antibodies by the tissues.

Tetanus—Anders believes that in all wounds involving the deeper connective tissue a prophylactic injection of antitetanic serum should be administered. He has found that increased pulse rate without assignable cause, peculiar nerve irritation, etc., are frequently followed by tetanus. He does not believe that tetanus is curable.

Cytodiagnosis.—Turton has found that in pleural effusion an excess of lymphocytes generally indicates a tubercular origin, while a preponderance of polymorphonuclear cells indicates an inflammatory process; due, for instance, to a pneumococcal or streptococcal infection. The cerebrospinal fluid in meningitis of tubercular origin usually shows lymphocytosis. The presence of lymphocytes is almost constant in general paralysis of the insane, in tabes, and in syphilitic diseases generally of the central nervous system. Cytology seems to afford a means of making an early diagnosis in these diseases.

Syphilis.—The recent findings of Schaudinn and Hoffmann tend to clear up the etiology of syphilis. Schaudinn has discovered the presence of spirochetæ in the juices of indolent glands, in the liver and spleen, in the papules, and in primary syphilitic affections. The spirocheta thought to be the cause of syphilis has been designated *spirocheta pallida* in distinction to another, the *spirocheta refringens*. The *s. pallida* is 4 to 14 microns in length and possesses from 6 to 14 turns in its spiral. It is almost transparent, and extremely motile, tapering to a point at each end; it is very small and thread-like. Metchnikoff and Roux had previously found that the virus of syphilis does not pass through a Berkefeld filter; they had also succeeded in inoculating chimpanzees with the virus. The *s. pallida* can be stained with Giemsa's, Marino's or Leishmann's stain. Douglas reports good results with the latter. A positive diagnosis can be made in fifteen minutes. Investigators throughout the civilized world have corroborated Schaudinn's findings. Metchnikoff and Roux hope to be able to produce a serum for the treatment of syphilis. They hope to secure the serum from monkeys. Fournier believes that the best method of preventing general paralysis that so frequently occurs in this disease,

is by a series of energetic courses of mercurial treatment at the onset of the infection, kept up for two years, with occasional intermissions. Then suspend the treatment for two years, and devote the fifth to a second course of treatment. Then suspend treatment, and devote the seventh or eighth year to renewed vigorous treatment. It is possible that the findings of Schaudinn and others will tend to revolutionize the treatment of syphilis and many of the affections considered due to the latter.

Ringworm of Scalp.—Fox prefers an ointment containing one gram of croton oil to the ounce of a base. It is to be rubbed in the affected area as often as necessary to excite the desired degree of inflammation. Sauberaud and others have secured very gratifying results with the x ray. In order to determine the quantity of the rays generated Sauberaud has adopted the use of a paper covered with an emulsion of platino-cyanid of barium.

Roentgen Rays.—The rays continue to be found satisfactory in the treatment of cutaneous cancer, acne, sycosis and tinea. In trachoma fairly good results have been obtained by a few operators. Coley contends that the rays should *not* be employed as a preoperative measure in deep seated cancer. In sarcoma he has found the rays ineffective. McMaster records 5 cases of sarcoma cured by the rays. In a few of the inoperable cases of cancer good results have been secured. Brown and others have found it necessary to protect both the operator and the patient against the destructive action of the rays on the testicles and ovaries.

Radium.—Radium has been found by Einhorn to be of service in treating esophageal cancer. The most valuable finding indicates that radium is of value in treating rabies (see rabies). Lassar has secured good results in cancrroids. Thies cured 2 cases of angioma. Chavean finds that radium destroys the virulence of viper and cobra poison after 50 to 60 hours of exposure. Exner places the radium in an aluminum apparatus since the aluminum does not absorb the radium as readily as does rubber. Cohn and others have obtained good results in cases of trachoma.

SURGERY.

Anesthetic —That the ideal anesthetic has not been attained is evidenced by the various ones advocated. Maunsell and Pringle have found that during the time of full ether anesthesia the excretion of

nitrogenous constituents of the urine amounts to practical suppression. Bevan and Favil emphasize the fact that hepatic toxemia frequently follows chloroform anesthesia. Bodine has secured gratifying results in hernia operations with Schleich's fluid. Kendaridjy and Berteaux believe that stovain is destined to revolutionize the question of anesthesia. They add 140 additional cases to their former report on stovain. Their results have been quite satisfactory.

Sterilization of Knives—This is an important question to the surgeon. Grosse places the knives on a wire apparatus and then in a glass tube. The wire prevents the knives from coming in contact with each other or the walls of the tube. The latter is tightly corked, and then exposed to steam at a temperature of 98 to 100°C. The minute amount of moisture contained in the air of the tube is sufficient to ensure the sterilization of the instruments at the temperature of the steam outside. The cutting edge of the instruments is not dulled.

Shock and Collapse.—That stimulants are absolutely contraindicated in the treatment of surgical shock is emphasized by Mummery. Saline solution left in the abdomen at the end of an abdominal operation is a valuable method of counteracting shock. Injection of ergot should be given at the very earliest sign of shock. Repeat if improvement in pulse tension follows. If restlessness continues after injection of morphin, the dose should be repeated. Keep the head down, the feet elevated; compress the abdomen by applying a tight binder; give intravenous infusion of salt solution. Adrenalin may chlorid may be added to the latter. He advocates intravenous infusion with physiologic salt solution to combat collapse following hemorrhage. Strychnin is especially harmful in treating shock. In passing I would add that there seems to be a general favoring of adrenalin in the treatment of shock. Strychnin is being correctly condemned.

Respiratory Tract.—Stocker finds that better results are obtainable with the Brophy operation if the edges of the palate be not pared until the sutures have been inserted and the bones moved toward the middle line. When the latter can not be brought together with reasonable effort, it is better to defer the paring of the soft parts until the bones are in apposition.

Ballanger has invented a swivel septum knife, the blade of which is pivoted to the extremities of the tuning-fork-like prong of the instrument and swings in a circle. The technic of the operation is after

the Menzel-Hajek method, with the exception of the cartilage, which latter, Ballanger removes in one piece and with one cut of the knife.

Ingalls drains the frontal sinus as follows: A steel pilot is passed through the natural canal into the frontal sinus; over this is run a hollow burr by means of which a canal 6 mm. in diameter is made; a self retaining gold tube is inserted. The tube is sufficiently large that pus will readily escape through it. The patient can irrigate the sinus daily.

Barclay succeeded in removing a cockle burr which was found resting upon the vocal cords of a girl. After having the patient to say "A" until practically out of breath, she was urged to take a deep breath. When the deep inspiration was taken he removed the foreign body without injury to the cords.

Semon records the first case in which a pure soft fibroma has ever been observed to have involved simultaneously the larynx and neck. It is the second case on record in which a partly intralaryngeal tumor has been removed without the larynx having been opened. The patient had worn a tracheotomy tube for 12 years. Paul records a case somewhat similar to the above.

Porter advocates closing of the tracheal opening and the skin wound in cases in which tracheotomy has been performed for the removal of foreign bodies. The advisability of leaving a small drain in the lower angle of the wound for a day or two is acknowledged. Many practical surgeons have found the partial closure and drainage far superior to other methods. It has been observed, perhaps, by many operators although no special mention of it had been made. Complete closure is frequently followed by considerable edema.

Tongue.—Butlin emphasizes the fact that you can not rely upon only one group of glands being affected by cancer of a particular part of the tongue. The carotid gland is often the first one to be felt by the patient. Butlin's method of investigating the condition of the glands and of removing them is, I think, to be highly commended. An incision is made from the mastoid along the anterior border of the sternomastoid muscle and ends at the sternoclavicular joint. Another incision is carried from the symphysis menti, across the side of the neck to meet the first incision about the upper border of the thyroid cartilage. The upper flap, consisting of skin, is turned up over the jaw and the lower flap is turned forward. Dissection begins from be-

low. The tongue and glands are removed at two sittings. Butlin mentions the important fact that cancer may recur after 3 1/2 years have elapsed. Lathrop and Scannell found that cases of cancer of the tongue operated on live longer than the non-operated ones. Bainbridge's patient was able to talk after the tongue had been removed. Delore and Duteil advocate puncture of the auricle as soon as it has been definitely determined that air has gained entrance into the veins. In all operations on the neck the accident must be guarded against by promptly clamping all veins before being cut.

Esophagus.—Sauerbruck acknowledges that partial resection of the esophagus is a very difficult and unsatisfactory operation even though it be performed in his air-chamber. He has overcome the difficulties attending other operations on the thoracic portion of the esophagus. It is not necessary to tie the buttons in place in anastomosing the stomach and esophagus.

Bérard and Lericke, Hacker, and others agree that foreign bodies should be removed by means of the esophagoscope—Hacker has had 38 cases and has never been obliged to perform esophagotomy. He adds, however, that the surgeon should always be ready to perform the latter operation in case the former method fails.

Navratil succeeded in closing a fistulous opening between the trachea and esophagus by transferring a section of the thyroid gland to the point where the suture had been applied in the esophagus. The technic employed is certainly an ingenious one.

Abdominal Section.—Blair has emphasized the necessity of conserving the motor nerves of the abdominal parietes. He finds that the median incision, or, if the nerve trunks are avoided, that in the *liniæ semilunaris*, causes least damage. An extensive lumbo-lateral abdominal incision that destroys no important nerves can be made by cutting from the tip of the last rib to the linea alba between the eleventh and twelfth nerves, and extending the incision in the median line. The subject certainly deserves more attention than has heretofore been accorded it. Blair's findings should be more carefully observed.

Atresia of the Vagina.—In Gellhorn's interesting case the atresia followed parturition, and was associated with a rectal fistula. There was incontinence of flatus and liquid feces. Intercourse impossible during past year. The annular scar tissue was excised, the edges of

the rectal fistula denuded and sutured, flaps were formed from the labia and turned inward after extensive episiotomy incisions had been made on either side to gain sufficient room in the exceedingly narrow vagina. The results were quite satisfactory.

The Peritoneum.—Borchardt employs injections of physiologic salt solution forty eighs hours before operation to increase the resisting powers of the peritoneum. Schmidt has employed 5 to 10 cc. horse serum in 9 per cent salt solution (250 to 500 cc.)

Dudgeon and Sargent's studies indicate that there is no doubt not only that the small lymphocyte is a phagocyte but that the eosinophile possesses phagocytic properties of the very greatest importance. In their opinion the vast majority of cases of peritonitis are due to the colon bacillus. They believe that limited operation should be the rule in peritonitis. In extensive suppurative peritonitis Dallgren "milks" the paralyzed intestines. He claims good results from the treatment. The exaggerated Fowler posture continues to prove extremely efficacious.

In tuberculous peritonitis, Mayo advocates closure of the abdomen without drainage. He believes it reasonable to suppose that tuberculous peritonitis has its origin in a local focus in practically every case. Whether the patient will regain and maintain general well being must depend to a large extent on whether the local focus thus removed is primary or secondary and, if secondary, as to the possibilities of cure of the chief seat of the disease. He especially emphasizes the fact that the condition is frequently due to a lupus of the Fallopiian mucosa. Murphy has previously called attention to this fact.

Appendicitis.—Without question, operation during the first few hours of the disease yields the best results. The contention that purgatives, food, and opium are contraindicated in this affection is gaining ground. Clemm finds that 98 per cent of cases treated by hot applications, avoidance of purgatives, and food, and opium, recover. Fitz believes that the physician is justified in delay until the conditions call for an immediate operation; these may be present at his first visit. If after twenty-four hours, there is no improvement, and especially if the fever increases, an immediate operation is preferable to further delay. The great advantage of opening the abdomen beyond the inflammatory mass, as advised by Harrington, is evident to all.

New Bobbin.—The new bobbin presented by Paterson is made

of gelatin and treated with chrome alum. In appearance it resembles the Murphy button. The surgeon can prepare the bobbin in such a manner as to render it resistant to the digestive secretions for a longer or shorter period as may be desired. The advantages of the new bobbin are quite obvious. It is to be hoped that it will prove efficacious. The Murphy button is by no means ideal.

Stomach.—The Moynihan-Peterson operation has been found very satisfactory. The anastomosis must be made as near the duodenojejunal flexure as possible. Moynihan sutures the margins of the opening in the mesocolon to the jejunum near the line of stitches between it and the stomach. Hartmann leaves 8 or 9 cm. between the duodenojejunal flexure and the anastomosis; a long fixation is made of the intestine going obliquely downward and to the right. Gould simplifies Finney's gastroduodenostomy. He employs two clamps, opens the stomach and duodenum, trims the mucous membrane, omits guide sutures, and makes the closing of the inaccessible pyloric angle easy by means of his mattress stitch. In his new operation of gastroenterostomy the edges of the incision in the posterior wall of the stomach are seized with forceps midway between the two angles and pulled apart as far as possible, thus making the incision run parallel to the greater curvature; the jejunum is opened and the cut edges of the stomach and jejunum are united with a continuous chromic suture; a continuous seromuscular stitch buries the rough areas, and is followed with an interrupted seromuscular stitch at either angle of the anastomosis; after stitching mesocolon to the stomach around the anastomosis, Gould inverts the intestine transversely by means of three or more layers of sutures thereby forming what he terms a successful and permanent valve. The site of the valve should be 3.5 inches below the gastroenterostomy. A lateral intestinal anastomosis is then made one inch below the valve.

In 77 gastroenterostomies for chronic gastric ulcer, Robson had no mortality. Mouellin prefers to excise the ulcer when possible, to prevent the possibility of cancer. In inoperable cancer of the pylorus Mayo believes that the McGraw ligature is the operation of choice. In 80 gastroenterostomies by the Moynihan Peterson method they lost but one case.

Laucereaux find that in every known case of gastric tetany there was some mechanical obstacle to the evacuation of the stomach. The

stenosis seems to be primary. He holds that peristaltism is one of the most reliable signs of organic stenosis of the pylorus. Cannon and Blake favor pyloroplasty for pyloric stenosis of non malignant origin. Mayo has stated that it should not be used when a large amount of scar tissue is present. Moynihan mentions the important fact that when recurrent gastric hemorrhage follows an operation for recurrent gastric hemorrhage it may be due to the Murphy button having slipped into the stomach.

Maury presents a triangular stitch for gastro- and entero enterostomy which seems quite ingenious.

Liver. - Carson's patient presented symptoms of floating kidney. Operation revealed floating right lobe of the liver and enlarged gall-bladder. The floating lobe was excised and the gall-bladder sutured to the liver. The findings of Frank, Crile, and Ochsner indicate that the secret in controlling hepatic hemorrhage lies in securing distinct, clean-cut flaps and suturing in such a way that the pressure is even. Crile believes that the low blood pressure in the liver explains why even pressure will readily stop hemorrhage. Cullen's success proves Keen's assertion that the size of a hepatic tumor should be no bar to operative intervention. Cignozzi believes that the most favorable cases for omentopexy are those of hepatic hypertrophy. In cirrhosis of cardiac origin the outlook is promising. When ascites is due to a thrombotic or phlebitic process, or if the obstruction is due to compression without, surgery may effect a radical cure. König has observed that antisyphilitic treatment is more effectual in cases of syphilitic tumor of the liver, if operation be performed. Mills has observed this to be true in gummata of the brain.

Slade states that thickening of the gall-bladder is presumptive evidence of carcinomatous change. He advises cholecystectomy in all cases where thickening is found at time of operation. Morris contends that adhesions of spider-web character in the region of the gall-bladder are frequently the cause of symptoms that are mistaken for gall stone colic, etc. Andrews attempts to prevent these adhesions from causing trouble after division, by suturing the colon to the liver. That the adhesions thus formed between colon and liver cause no trouble, Andrews feels confident. He believes that it is when they involve the stomach that symptoms arise.

(To be Continued.)

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of September 7, 1905 ; Dr. John Green, Jr.,
President, in the Chair.*

Dr. JOHN GREEN, JR., read a paper (see page 8, this issue) on the
Value of Constitutional Treatment of Glaucoma Simplex.

DISCUSSION.

Dr. JESSE S. MYER said that the patient referred to by Dr. Green was one of a type very frequently met with by the internist: It was one of those cases of myasthenia gastrica et intestinalis of congenital origin, at least it had been impossible to find any definite cause for the condition. There was a marked degree of gastroptosis and the colon was also in a state of ptosis, there was a movable right kidney, displaced about one half its length downward and fixed in this position, a floating tenth rib, a very marked degree of emaciation and a very long thin thorax. Myasthenia intestinalis is very frequently found in married women after labor but in this case it could be explained, so far as known, through an inherited tendency, the patient being an unmarried woman. The patient had tried everything in the way of drugs for constipation. Systematic treatment was instituted consisting of a proper diet, massage of the bowels and simultaneous application of the Faradic current. He also used a prescription consisting of resorcin grains 3, extract of nux vomica grain $\frac{1}{4}$, belladonna grain $\frac{1}{10}$ and cascara sagrada, which he had found exceedingly good in cases of atony of the intestines. She took these pills for a long period of time. All he had hoped to accomplish in her case was a correction of the constipation. She had responded to the treatment much better than he had expected and the gastric symptoms as well as the constipation were relieved. The last time he had seen her she was complaining only of vertigo, which he judged to have been due to the glaucoma rather than the general condition. The improvement in the glaucoma following the improvement in the general condition was new to him. He hoped it was true and not merely that relief of symptoms that sometimes occurred in these cases from time to time. In cases of

myasthenia gastrica et intestinalis. especially the former, the treatment usually laid down in the text-books did not yield good results. Some authorities on the subject suggested that these patients be put on a dry diet. Dr. Myer's plan had been to give the patient frequent meals and frequent small amounts of fluid. Fluids are especially necessary where constipation is present, and its withdrawal does harm as a rule.

Dr. N. M. SEMPLE considered the case reported by Dr. Green interesting, especially in that it was a case of glaucoma simplex in a young person. Most of these cases were associated with senility and it was just in these cases of glaucoma simplex that there was the most doubt as to the etiology and the real existence of glaucoma. In the classical study of glaucoma made by von Graefe, in 1857, the latter claimed that these cases should be separated from real glaucoma inasmuch as the typical signs of glaucoma (*e.g.* of increased intraocular tension) were absent. It was sometimes difficult to know whether increased intraocular tension was present at all. Yet, such cases since 1861 (after Donders) had all been called glaucoma and had been treated as such, but recently there had been a tendency to go back to von Graefe's idea. There were many cases that presented the symptoms noted in Dr. Green's case, in which there were no inflammatory signs, where the increase in tension was somewhat in doubt, cases that ran a chronic course and were only included in the glaucoma class because of the excavation of the disc and the contraction of the field of vision. There had been an attempt to explain the former on the ground that it was possible that in certain cases the normal tension of the eye might produce an excavation of the disc because of a weakened condition of the lamina cribrosa, resulting in a certain amount of atrophy of the nerve fibers, which would be shown by the contraction of the peripheral field. Most frequently the cases of so-called glaucoma in young people were of this type, which might be another reason for taking these cases out of the real field of glaucoma. From the fact that glaucoma in its typical form is found almost entirely in old people and just such cases as the above are found chiefly among young people, might not the latter be due to some change in the optic nerve or its supporting tissue where it entered the eye rather than to whatever might be considered the real cause of glaucoma. It seemed to him, also, that just from this standpoint the general condition of the patient might be of importance. For

instance, if these cases were real optic atrophy, then the general condition of the patient might have a good deal to do with producing just such conditions about the cribriform plate as to bring about this state of affairs. These patients rarely complained of rainbow lights or mists before the eyes or anything to indicate an inflammatory condition, the anterior chamber was normal and the pupil itself was normal in shape. He had had recently at the university clinic, a patient 32 years of age, with practically an identical history with that of Dr. Green's patient. The excavation was marked. He believed that it was often very marked in young people. In this case it was 7 to 8 diopters. Attention to the general condition produced some improvement in the ocular condition. In reviewing this case and others reported lately, he felt that the old view of von Graefe, that these cases should be really taken from the class of glaucoma and given a name to themselves was correct. The oculist would not be limited to the idea of merely reducing the intraocular tension, for in the majority of cases it was entirely absent as far as could be made out. The old idea of calling these cases amblyopia with optic excavation was very pertinent.

Dr. CLARENCE LOEB, in looking up the literature at his disposal, could find only that glaucoma had been associated with both diarrhea and constipation. There was no *a priori* reason why the condition should affect the eye. He had noticed in the discussion that Dr. Green had said that the use of the stronger solution of pilocarpin gave considerable pain and he had had to use a weaker one, and Dr. Myer had stated that he had given the patient extract of belladonna three times a day. These statements called to mind a paper which appeared two or three years ago in which the author advised the use of atropin in glaucoma as opposed to myotics. This paper had not impressed Dr. Loeb very much at the time but in listening to the discussion it had occurred to him that there might be something in the use of the belladonna. He did not like to be quoted as advocating the use of belladonna or its alkaloid, atropin, but it seemed to him that all the light that could be thrown upon the subject was of value, and he merely offered the suggestion that the belladonna given internally might have acted upon the condition through the general circulation, and brought about the improvement in that way.

Dr. CHARLES SHATTINGER suggested as a possible factor in the improvement of this case, the very marked effect abdominal massage

has upon the blood pressure. He understood from Dr. Myer that massage was given for a period of about three weeks, each time a half hour. Certainly massage of that kind would affect the general blood pressure, not only temporarily, but also permanently. He knew altogether too little about the etiology of glaucoma - and according to Dr. Green hardly anyone else knew anything definite—but it seemed to him that no matter what the exact causation of the increased ocular tension, an improvement in blood pressure, in the direction of a suction on the venous vessels of the upper part of the body, for instance, would necessarily affect the eye. Even if it did not affect its tension directly it would affect its nutrition. Constipation often interfered with the venous circulation in the abdominal organs, and the removal of that condition would have more or less influence upon the blood pressure of the body. He had noted repeatedly that in abdominal massage, the earliest improvement was noticed in the complexion and in the eyes, even before any improvement was noticed by the patient. In a pamphlet by Schmidt-Rimper explaining expression by the eye, he attributes the luster of eye to the circulation of fluids in the ocular tissue. When this is interfered with, the eye becomes lusterless. Whenever he noticed the eyes of a patient gaining in luster, Dr. Shattinger always felt that a change in health would follow.

Dr. LOUIS DRECHSLER had received a report from a patient having an ocular trouble in which constipation was a very troublesome condition, the oculist had sent the patient back to him for general treatment. The constipation having been relieved the ocular trouble had improved so that the patient went to work. He asked if there might not be cases of ocular disease other than glaucoma, constipation also being present, when the ocular disease showed improvement after relief of the constipation.

Dr. FELIX GARCIA hesitated to discuss a specialist's paper. It seemed that this woman had endured this condition a number of years, the loss of one eye and almost the loss of the other, before seeking treatment, showing that the general practitioner was responsible for detecting these cases. Many of the patients were dismissed with an eye-wash. He hoped that Dr. Green would continue his papers so that they might hear more on this subject of ocular disease.

Dr. GREEN, in closing, said that, in regard to the vertigo Dr. Myer had mentioned, when he saw the patient in August (Dr. Myer

having seen her last in June) the vertigo had disappeared entirely. At the time of her visit in June Dr. Myer had stopped the regular use of the nux vomica, belladonna and resorcin pills. Dr. Green could not feel assured that the present improvement was going to be permanent, but he hoped that the general treatment and the use of myotics would hold the ocular disease in check indefinitely. A point, perhaps, not sufficiently emphasized, was the youth of the patient. Glaucoma was a disease of the fifth and sixth decades, most cases occurring between the fiftieth and seventieth years. It was an extremely rare disease below twenty. He could not say as to the frequency of the acute as compared with the chronic type of glaucoma in early years. His impression was that, in young people, it was apt to be of the acute type leading promptly to blindness. The point of particular interest was the occurrence of juvenile glaucoma associated with myasthenia gastrica et intestinalis. In regard to the dissociation of glaucoma simplex from other types, he was inclined to agree with Dr. Semple, who mentioned that the excavation of the nerve head was apt to be greater in young people. He believed this was true, also. Dr. Loeb had referred to the use of an oily solution of pilocarpin. It was an oily solution of eserine that he had used. A very weak solution would produce excellent myosis and such a solution could be entrusted to the patient to use as it did not produce conjunctival irritation. He recalled the paper Dr. Loeb had mentioned and it had struck him as a most ludicrous affair, one not to be considered at all. The suggestion of Dr. Loeb that the use of the belladonna internally might have resulted in an ocular improvement, was interesting but he would not like to subscribe to it off hand. As to the improvement in other diseases of the eye following treatment for constipation, he had had no experience. Dr. Garcia had called attention to the fact that many general practitioners did not recognize disease of the eye early enough. But in glaucoma simplex there was no obvious external sign to indicate the condition. It was only on testing the vision that there was found deterioration of one or the other eye. Usually these patients made little complaint except of occasional occipital pain or aching in the eyes. The general practitioner was certainly not to be held responsible for not recognizing this type of ocular disease. Of course in inflammatory conditions, such as iritis, conjunctivitis, etc., it is imperative that the general practitioner should be able to make an early and correct diagnosis.

Dr. GEORGE HOMAN asked if it was not possible that a prolonged general malnutrition might result in glaucoma.

Dr. GREEN, replying to Dr. Homan, thought it might be possible but he would not like to hazard a guess.

Dr. GARCIA asked if nephritis was an etiological factor.

Dr. GREEN replied that he did not know that it was, but there were many glaucomatous people who had nephritis.

Dr. HOMAN thought that the expression used in the paper "constitutional treatment" was, perhaps, not quite accurate, as it possibly implied more than Dr. Green had meant to convey. Perhaps, general treatment would be a preferable term.

*Meeting of September 21, 1905; Dr. John Green, Jr.,
President, in the Chair.*

Dr. GEORGE GELLHORN presented a patient operated upon for
Atresia Vaginæ.

DISCUSSION.

Dr. TAUSSIG had witnessed the operation and followed the case in the after-treatment. The Doctor was to be distinctly congratulated on the result. There were several points to be learned from this case. Regarding the etiology of atresia, he believed the text-books spoke too much of the congenital forms. The majority of atresias were probably due to such traumatism as had occurred in this case, necrosis resulting from the injuries produced during prolonged labor, and another class of cases in which the atresia was due to gonorrhea in early childhood. Very often these cases were overlooked until at puberty, when menstruation commenced, the collection of fluid bulging out showed the complete obliteration of the vagina. In these plastic operations stress should be laid not upon speed but upon carefulness. Results show that only careful work gives satisfaction. Three points in particular must be carried out: There must be a complete elimination of all scar tissue; secondly, a careful stopping of bleeding; and, finally, there must be a careful, painstaking approximation of one surface to the other so as to leave no raw area for granulation and new scar tissue formation.

Dr. McCONNELL said that at the University of Pennsylvania he had seen a case which he had been reminded of when Dr. Taussig had referred to gonorrhea as a factor in the causation of this condition.

The patient was a colored woman, pregnant about five months. No vagina could be found but an opening that would admit only a small bougie. But she had been impregnated and was later delivered. In this case there was a history of gonorrhea in early childhood.

Dr. JACOBSON had recently seen a case of almost complete atresia. This woman gave no history of any of the causes named but stated that she had worn a pessary for a long time, which sometimes caused atresia vaginæ. He had seen several cases of atresia from the use of pessaries. In one case the pessary had been in the vagina for six months and a difficult operation was required to remove it. Incrustations had formed around it. Another cause of atresia, not mentioned is syphilis. Also injuries in infancy and early childhood.

Dr. CARSON, in regard to the etiology, said that his experience was that most of these cases were due to traumatism. A case had recently presented itself and he had not cared to undertake it. There was almost complete, if not complete, absence of the upper wall of the vagina. He had recently suggested to Dr. Gellhorn an operation that had occurred to him in a study of two cases of complete absence of vagina and uterus. In one of these cases he had operated and restored the vagina by using the labia minora. After dissecting the bladder from the rectum he then carried the nymphæ, which had been dissected and spread out, up into the space this making a vagina several inches in length. The case was a rather peculiar one. This young woman had come to him as a young girl. She wished to be married and he advised her to let it alone. She saw Dr. Mudd, who urged the same thing, and several other physicians did the same. They all advised against an operation, but she was insistent and so was the young man she was to marry, and an operation was done and, so far as Dr. Carson had been able to learn, with success. As to how best to close the large openings, where there was almost complete loss of bladder wall, he suggested dissecting above the pubes into the vagina, taking a flap of skin from the abdominal wall, turning it into the vagina and filling up the defect. Where there was atresia, the vagina should be previously enlarged. It seemed to him that this might be possible. He thought he would try it on a cadaver some time. He wished to hear whether Dr. Gellhorn or others thought this operation feasible.

Dr. GELLHORN, in closing, stated that he considered Dr. Carson's idea to be an absolutely new and ingenious one. Whether it could be

carried out in the living could only be determined by experimenting on the cadaver. But he thought this might be a good way to furnish the surgeon with material, which frequently was so difficult to obtain, in order to line the entire length of the vaginal tube with suitable tissue.

Dr. ROLAND HILL read a paper (see page 14, this issue) on the
Treatment of Empyema.

DISCUSSION.

Dr. McCONNELL discussed the subject from its bacteriological side. The bacteriology in these cases of empyema seemed not to differ so frequently in adults as in children. Probably the streptococcus was the most common, taken all together, but among children the pneumococcus was most frequently found. It seemed to be a much more rapid and benign affection in children than the streptococcic which is slower but more severe. In adults the tubercular form was quite common and in that the method of infection was different. It may have gained entrance through the rupture of a tubercular abscess. In other forms, the pneumococcus particularly, the infection seemed to extend through the lymphatics while the tubercular form did so through rupture of the pleura. When there was found a primary involvement of the pleura in these cases there would also be found some implication of the lung.

Dr. SHARPE said that this paper of Dr. Hill's brought to mind the difficult cases the surgeon sometimes encountered. He used the term "difficult" advisedly because in the advanced cases conditions were encountered that were sufficient to tax the ability of the best men. He regretted that owing to the scope of the paper Dr. Hill had been obliged to omit a presentation of differential diagnosis; for it was sometimes very difficult to determine whether an empyema really existed or not. Aspiration was of definite service from a diagnostic point of view and of curative value in children; but it should be relegated to the past as a curative measure with this exception. When, in old cases of empyema, the pleura had become densely fibroid, it was practically impossible with an ordinary needle, used in the ordinary fashion, to make a successful aspiration. One might realize in time the probability of encountering such a condition and use a special needle, but even then the operation will usually prove a failure. In dissecting off the pleura as is done in the radical attack one sometimes develops a flap that is simply surprising in density and thickness. In these severely critical cases the patient's vitality must be conserved to the utmost. For that reason he would be opposed to giving a general anesthetic for diagnostic aspirations and incisions. Much could

be accomplished by the use of infiltration anesthesia; and he advised a consideration of scopalamin-morphin anesthesia in preference to ether or chloroform, in the critical and asthenic form.

Dr. PFEIFFENBERGER called attention to the fact that the Doctor had not said anything about irrigation. In his time of service in the City Hospital, the practice had been on about the second or third day after they had been allowed to drain, irrigation with permanganate solution was resorted to. He had seen five or six cases in which irrigation was done and it seemed to hasten recovery rather than result in collapse.

Dr. DEUTSCH had found the Gigli saw of great advantage in these cases. It could be used around, one or several ribs without pulling the ribs. The rib cutting shear, while a useful instrument, gave the ribs a tremendous jerk and often lacerated the vessels running under the rib. He wished to specially recommend the Gigli saw in these cases, and hoped the Doctor would try it in his next case.

Dr. TOOKER, referring to Dr. Pfeiffenberger's statement regarding the efficacy of irrigation, said that since leaving the City Hospital he had seen two cases that had been irrigated there for several weeks. One patient had an empyema a year and a half ago, and had small pieces of two ribs removed; the cavity had been washed out for almost two months. The patient was operated upon at Mullanphy Hospital about five months ago, evacuating a quart of pus, and an extensive thoracic resection performed. Wound was kept open for two months with gauze drains. At the present time the patient has evidences of some pus in his chest. Some of these cases seem to be very obstinate and discouraging.

Dr. HILL, in closing, said that in regard to Dr. Deutsch's recommendation of the Gigli saw, he considered it a most excellent idea. He could readily see how a certain amount of shock might be saved, though he had never used it in such a condition. Dr. Sharpe's remark about anesthetics was a very good one. In an ordinary aspiration Dr. Hill very rarely used a general anesthetic. In removing the ribs, however, he did use general anesthesia. Dr. Sharpe had called attention to another very important matter, namely, the thickness of the pleura in these old empyemas. Sometimes one got the needle into tissue like sole-leather. One of the cases just reported had occurred up in the country. In this case the ribs were drawn one above the other and beneath them the pleura was at least three quarters of an inch thick and it was very difficult to secure drainage. Another point of importance was that the heart should be left alone. This patient had done very well until he had gotten his finger against the heart, when she collapsed and nearly died. In regard to irrigation, he had not done much in that line. When the tubes were kept and good drainage secured, enough had been done.

BOOK REVIEWS.

The Courier of Medicine Company will mail, postpaid, any book reviewed, on receipt of price.

The Physicians' Visiting List.

Lindsay & Blakiston's for 1906. Fifty-fifth year of its publication. The dose tables herein has been revised in accordance with the new U. S. Pharmacopeia (1900). Price, for 25 patients per day or week, \$1.00. P. Blakiston's Son & Co., Philadelphia.

This well-known visiting list is published in three editions—regular, monthly and perpetual. Following the visiting list proper you will find special memoranda pages. There is none better.

The Practitioners' Visiting List.

Heretofore known as the "Medical News" Visiting List, for 1906. An invaluable, pocket-sized book, containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contains 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil and rubber, and calendar for two years, \$1.25. Thumb-letter index, 25 cents extra. By mail, prepaid, to any address. Descriptive circular showing the several styles sent on request. Lea Brothers & Co., Philadelphia and New York, 1905.

This Visiting List is printed on fine, tough paper, suitable for either pen or pencil, and is bound with the utmost strength in handsome grained leather and is sold at the lowest price compatible with perfection in every detail.

Abbott's Bacteriology.

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. Abbott, M.D., professor of hygiene and bacteriology, and director of the laboratory of hygiene in the University of Pennsylvania. New (7th) edition, enlarged and thoroughly revised. In one 12mo volume of 686 pages with 100 illustrations of which 24 are colored. Cloth, \$2.75, net. Lea Brothers & Co., Philadelphia and New York, 1905.

Of the text-books on bacteriology that we have recently seen, this one seems for many reasons the best one adapted to the use of students and practitioners of medicine, the introduction to each step is so carefully explained and so clearly set forth that "He who runs may read." The writer has displayed remarkable tact in this feature, and a very important feature it is in a book on bacteriology.

The newer methods, the untied conceptions are not found here, quite properly. This alone recommends the book very highly, for these things are exceedingly confusing to the one not accustomed to daily work in the laboratory. This aim has been carried out without the sacrifice of the necessary matters. We take the liberty of stating, however, that the protozoa might well have been included—The ameba group, the trypanosoma, the spirocheta forms of the trypanosoma, e.g., of relapsing fevers and of syphilis, belong here. The malarial protozoa, the cercomonæ, the microsporidia, the protozoan-like bodies of scarlet fever and smallpox, the negri bodies of rabies, among others, deserve mention, but are omitted.

The chief changes made in this recent edition have been in the chapters devoted to infection, immunity and preventive medicine. These are the most concerns in bacteriology to the student and practitioner, for whom this book was written.

The Psychic Treatment of Nervous Disorders.

By Dr. Paul DuBois, professor of neuropathology, University of Berne. Translated by Smith Ely Jelliffe, M.D., Ph.D., and William A. White, M.D. 8vo, 471 pages, cloth, \$3 00, net. Funk & Wagnalls, New York.

Dr. DuBois has succeeded in producing the same state of mind in his readers which he produces in his patients and leads the former as triumphantly as the latter along the paths he desires they should follow.

Such a book has been genuinely needed in America and Drs. Jelliffe and White deserve thanks for placing the translation, which is excellent, in the hands of American readers.

We have known and used the methods of psychical cure but we have been timid in their application and our results have been correspondingly limited. Professor DuBois himself confesses to have felt his way cautiously and with misgivings, only arriving at full confidence after some years, which confidence is so very infectious that the reader is immediately "saturated." The book is beautifully written and reads easily—one lays it down with reluctance, like he does a beautiful story.

The book is a practical one. Precise methods of the application of psychical cure are laid down, fully elucidated by clinical descriptions. Conversations the author has had with patients are given to illustrate fully methods and difficulties to be met.

We feel sure any physician will be fully repaid for his time spent in reading it. It is worth the while, which is much more than can be for much recent medical literature.

Biographic Clinics.

By George M. Gould, M.D. P. Blakiston's Son & Co., Philadelphia.
Volume III.—Influence of Visual Function Upon Health. Price, \$1.00.

The third volume of this series is composed of 13 chapters, with 2 short articles appended. Two of the chapters are devoted to "The Life Tragedy of John Ad-dington Symonds" and "Taines Ill Health," in which, by quotations from the biographies of these two literateurs, is set before the reader an array of symptoms which are recognized by ophthalmologists as being caused by eye-strain. In the chap-

ter on "The New Ophthalmology" the author contrasts the work of the ophthalmologists of the past, who were content to study and treat the eye alone, or, with it the general system only as it affected the eye through the blood or by contiguity, with those who now study the entire organism, relieving symptoms and curing diseases far removed from the eye, but caused by the nervous system being undermined by eye-strain consequent upon optically imperfect eyes. In other parts of the book some of these symptoms and diseases, as related to and caused by eye-strain, are discussed at some length.

While Dr. Gould probably takes the most advanced views on this subject of any of the writers of today, there are many, both in this country and in England, who are in sympathy with him. He has incorporated in this work several articles by Simeon Snell and Ernest Prouger giving some of the results of their studies along this line. We bespeak for this volume a place in the library of every physician as well as ophthalmologist.

Rheumatism of the Feet.

L. W. Ely says that among the patients seeking relief at an orthopedic clinic probably the most frequent complaint is rheumatism of the feet, yet it might be said with slight exaggeration that an article on this subject should read like the old book on snakes in Ireland: "There is no rheumatism of the feet." One of the commonest affections giving rise to pain in the feet is flat-foot. Another is anterior metatarsalgia, or Morton's toe. Gonorrheal arthritis or peri-arthritis of the ankle has often been observed, and the author says that there is a form of gonorrheal infection characterized by extreme sensitiveness about the sole, to which he gives the name of gonorrheal foot. The pathology of this affection is still a matter of doubt. Hysteria may simulate rheumatism of the feet, and tuberculosis of the ankle and tarsus must also be carefully excluded, as any circumscribed persistent, painful swelling in the foot, especially of a child, is to be viewed with extreme suspicion. The sequelæ of fractures, and the pains of late syphilis or of locomotor ataxia must also be kept in mind. Gout and acute rheumatism itself close the list of such affections, and it is pointed out that acute articular rheumatism never leaves behind it a damaged joint. The treatment of these conditions is then briefly outlined, the chief adjuvants required being zinc oxid plaster, plaster of Paris, a few drugs, and some assistance from the bracemaker and shoemaker. — *Med. Rec.*

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ORIGINAL CONTRIBUTIONS.

**Is Syphilis or Mercury Responsible in the
Etiology of Dementia Paralytica and
Locomotor Ataxia?**

By O. L. WOLTER, M.D.,

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I BECAME interested in the subject of the etiology of paresis and tabes while at the City Hospital. I saw many cases of tabes, but the most severe cases I saw were those in which secondary syphilis was mild and tertiary syphilis entirely absent.

A number of tabetics of vague secondary and absent tertiary syphilis had taken thorough mercurial treatment covering a period of years. Why should tabes follow victims of lues, if the destructive processes are mild or absent, constituted an interesting proposition. Why should victims of intense syphilis proportionately escape locomotor ataxia and its congener paresis, and why are these diseases rare in the negro, were equally interesting questions. The most severe case of tabes I ever saw was a City Hospital patient. He is a white man,

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October 19, 1905.*

in the middle period of life. About eight years ago he had a sore on the penis, and a physician whom he consulted pronounced it a specific chancre. This patient always had a morbid fear of lues and, as a result, he readily submitted to heroic mercurial treatment covering several years.

Careful examination and questioning brought out the fact that he never had characteristic secondary syphilis.

The history of the chancre was not pathognomonic and tertiary syphilis was not demonstrable. The patient had lost the greater part of his teeth while submitting to the specific treatment.

It occurred to me that the diagnosis of syphilis in tabetics and paretics was often wrong and that the mercurial treatment following a mistaken diagnosis in these so-called mild cases of syphilis is largely responsible in the causation of paresis and tabes. The absence of sclerosis of the brain and cord in the negro could only be explained on a similar line of reasoning.

I believe the subject worth discussing, and that is the object of this paper.

Syphilis is a protean disease and for that reason it is not made to serve as a scapegoat in many instances. In order to evade too direct an accusation writers call the pathological findings of paresis and tabes a parasymphilitic or a metasymphilitic condition. They quote about the similarity and entity of the clinical picture of these two diseases, and they declare syphilis will simulate any known disease, yet no matter in what form it appears, it has recognizable earmarks, and by its earmarks we recognize syphilis in progressive dementia and tabes dorsalis.

The opinion of writers on the subject is well illustrated by Arthur Conklin Brush. It is shown as follows:

"No syphilis, no tabes."—Ferrier.

"Tabes is a syphilitic process."—Wiegert.

"It can not be said that tabes never originates without syphilis."—Bailey.

"That syphilis is not the only cause."—Gowers.

"It is not a syphilitic process nor a sequelæ of syphilis."—Peterson and Burr.

"That syphilis is the most important cause, but distinctly not the only cause."—Bramwell.

"Less importance is now given to syphilis and more importance to other poisons."—Fulton.

The above quotations illustrate the opinions of well-known writers on the subject.

A disease as protean as syphilis can easily shoulder the trouble, but is it really to blame? There are important reasons to believe that syphilis plays a minor rôle in the etiology of sclerosis of the brain and cord. For instance, although about 90 per cent of negroes in our great cosmopolitan city have syphilis, can any one remember ever seeing a case of paresis and posterior spinal sclerosis in an Ethiopian? The rarity of these diseases in this race, though for the most part syphilitic and debauched, is most singular. Who will explain the absence of tabes and paresis in the colored man?

It can not be argued that they are more thoroughly treated for syphilis and it can not be said that they are endowed with ancestral immunity. The average negro most frequently receives no treatment for lues, and the most severe secondary and tertiary lesions are found in the colored man. Writers claim lack of proper treatment tends to develop the disease, but in this instance does it appear to do so?

The theory that paralytic dementia and tabes in 90 per cent of all cases is a metasymphilitic condition is, to my mind, not so sound as the theory that the diseases are usually a metacurial condition.

The points to be considered in the discussion of the latter theory may be grouped as follows:

1. The disease is rare in the negro.
2. Why is the brainy individual the usual victim?
3. The pathology of paresis and tabes does not compare with the pathology of primary, secondary or tertiary syphilis.
4. Why does it take paresis and tabes a long time to develop?
5. How mercury may produce the pathological changes as found in paresis and tabes.
6. The fact that antisymphilitic treatment does no good—but actually does harm.
7. Why is it natural that syphilis should shoulder the trouble.

1. Why is the disease rare in the negro? I have never seen a typical case of paresis or tabes in an Ethiopian. In

order to question my experience more thoroughly, I made inquiries. Dr. Atkins, Superintendent of the City Hospital for the Insane, and a man of considerable experience as a neurologist, declared: "I do not remember ever having seen a typical case of dementia paralytica or locomotor ataxia in the negro."

Dr. Max E. Witte, Superintendent of the State Hospital for the Insane, Clarinda, Iowa, a most careful, observing and competent neurologist, says; "I have seen several cases of organic dementia due to syphilis in the negro, but I can not remember ever having seen a well-marked case of true paresis or locomotor ataxia. * * * My explanation is that paresis occurs in the highly-developed brain only."

Substantially the same reply was received from other sources.

The rarity of these diseases in the negro can not be attributed to proper surroundings and regular mode of life, because here we have a people addicted to every known excess. They live in unhygienic surroundings, they observe irregular hours, as regards eating and sleeping; they expose themselves to bodily violence, and they are addicted to alcohol and sexual excesses long before adolescence. As a result of venery, the negro in our large cities is both a syphilitic and a gonorrheic, and those affected with syphilis are, in 80 per cent of cases, alcoholics and to a great extent addicted to cocain and morphin. Bodily violence, alcohol and venery are supposed to lower the vitality and in that way come in for their share as a predisposing or direct factor in the causation of these diseases in the white man, but then why do they form an exception in the negro?

Having become a syphilitic the colored man allows it to run a pretty typical course without interference. Within the course of a number of years he presents himself with syphilitic gummata, syphilitic osteitis, syphilitic hemiplegia and foul ulcers. The course it runs is typical, and a negro once a syphilitic is always one. Some receive some sort of treatment—others receive no treatment. If they do take mercury, it is with no system; it is taken irregularly and for no prolonged period of time. Syphilis is given free rein and it exhibits itself by running a typical, uninterrupted course. Primary, secondary and tertiary syphilis succeed each other in

their natural evolution. But then why do they not become victims of paresis and tabes?

2. And why is the brainy individual the usual victim? To say the negro lacks a highly-developed brain, which some writers declare is essential in the production of paresis, does not stand the test of criticism and, therefore, such reasoning is not well taken and, hence, illogical. Is there such a thing as more highly-developed brain? A fully-developed nervous system means a normal nervous system. If it is not fully developed, it is faulty, and an ill-developed nervous system is quickly recognized by its manifestations, as seen in imbecility, idiocy and epilepsy. The average negro's nervous system is as fully developed as ours. It may lack training, but it is just as susceptible to impressions, stimuli and disease as our nervous system. That paresis and tabes loom up prominently in wealthy, brainy and professional men can not be denied. But the reason follows, brains are usually associated with wealth, and brains and wealth are the requisites in obtaining thorough antisyphilitic treatment. If an individual has no money he can not afford to pay for a treatment of lues covering months or years. Then, again, if he has not the intelligence he can not understand why he should continue treatment for a disease after all the apparent symptoms have disappeared. It follows that the requisites of thorough antisyphilitic treatment are brains and money—and, since these are the essentials in obtaining the treatment, it gives us the reason why paretics and tabetics are usually individuals of prominence. Why individuals of inferior caste are greatly immune, and we find reason on comparison to trace the etiology of progressive dementia to mercurialization and not to syphilitic virus.

The man of brains tries to escape the baneful energy of this loathsome disease. but does he escape anything?

The same facts as regards the negro hold true of the lowly white man. Like the negro, he is saturated with active untreated syphilis, usually the victim of dissipation and every other known syphilitic condition, but proportionately he escapes paresis and tabes. Are bodily violence, alcoholism, a neuropathic diathesis and every known mode of dissipation potent predisposing factors?

3. The morbid physiology of paresis and tabes does not compare with the pathology of primary, secondary or tertiary syphilis. The so-called infectious granulomata characteristic

of the secondary or tertiary lesions are totally absent. The pathology of tabes is a sclerotic process, pure and simple. A hyperplasia of the connective results from decay of functioning tissue. Whether this substitution is the result of primary decay of the parenchymatous tissue or whether initial hyperplasia of the interstitial tissue causes the sclerosis is of little concern. The fact remains that there is no analogy in the pathology of paresis and tabes comparable with the pathology of syphilis. Since the morbid anatomy does not correspond with the pathology of any stage of lues, it alone creates sufficient reason to seriously question the specific pathogenesis of paresis and tabes.

4. Why does it take paresis and tabes a long time to develop? Tabes and paresis do not become apparent soon after one has been infected with syphilis. It takes time. It usually takes 10, 20 or even 30 years. Why does it take that long? The period of time required shows that the process of destruction taking place in the cord and brain is not malignant. It demonstrates itself to be a gradual, insidious process—a destruction that apparently does not exist, but after a number of years it amounts to a dreadful reality. The mode of destruction may be compared to the wearing out of a rock caused by the constant dripping of the drops. The rock appears to be unimpressionable and impervious to the dripping of the drop, but still it wears out. After a number of years of continuous dripping it becomes evident that its destruction will soon be complete. The infinitum becomes a magnitum. As unimpressionable and impervious as the rock seems to the dripping of the drops, allow the wear to continue and multiply the injury by a number of years, then it becomes evident that it will soon be destroyed.

Similar to the process of destruction caused by the drop, is the process of destruction of functioning nerve tissue of the brain and cord in paresis and locomotor ataxia. Analysing the slow, gradual and insidious decay of the brain and cord in these two diseases, we find it just what we could expect of nerve tissue permeated and infiltrated with a foreign substance like mercury. Constantly present and constantly replenished by years of mercurialization—the vitality of this vital tissue is lowered, and death of the most specialized and vital tracts and the substitution therefor of fibrous tissue is the ultimate result. The decay, necrosis, with hyperplasia of

interstitial tissue can not be accomplished at once. It takes time. It takes years. The pathogenesis of these two diseases must be the same, hence the analogy of morbid anatomy and morbid physiology.

5. It remains to be explained how does mercury produce the pathological changes of paresis and tabes. In order to do this, it becomes necessary to define inflammation:

The most acceptable definition of inflammation is a modification of Sutton's as quoted by Park. "Inflammation is an expression of the effort made by a given organism to rid itself of or to render inert noxious irritants arising from within or introduced from without. The causes of inflammation are classified as bacteriological, thermal, mechanical and chemic. Of all causes bacteria play the most important part.

Inflammation caused by chemic bodies is typically seen in nephritis due to Spanish flies, or in neuritis due to plumbism or as seen in chronic arsenic poisoning.

Mercury is a chemic body, and all therapeutists agree that it is a most diffusible element. As an infiltrant it permeates all the tissues. One treated for syphilis for two years or more must expect the entire body to be infiltrated by this metal and it is safe to assume that the intensity of the infiltration is proportionate to the amount supplied and the length of time it is taken. As an adventitious body to the tissues, it must necessarily be followed by tissue reaction, and this reaction is the result of the effort made by a given organism to render inert noxious irritants introduced from without. It is a reaction of invaded healthy tissue against injury. Mercury, a heavy metal, with an atomic weight of 200 and endowed with the property of diffusibility finds lodgement in the vital tissue of the cord and brain. Here it must act as a foreign body, and reaction of the tissue follows. Having become permanently lodged this chemic substance exerts its energy, which may be considered twofold: First, its energy exerted as a foreign body, and, second, by virtue of its chemical and therapeutic properties. Diffused in the tissue of the cord and brain as a foreign substance, irritation around the site of lodgement takes place. Being a permanent adventitious body a continuous irritation results. Irritation, whether chemical, bacterial, thermal, or mechanical, means inflammation. The intensity of the inflammation depends on the nature of the irritation. The nature of the inflammation corresponds to the nature of the

irritation, but no matter what the degree of inflammation may be changes in the surrounding cell structure result with consequent perversion of cell function.

The changes that occur are degeneration and destruction of cell with subsequent cell regeneration—or by cell repair only.

Cell repair is all that can be expected following decay of highly organized tissue. Degeneration and necrosis of the nervous system is followed by repair only.

The repair that follows is substitution of complex functioning tissue by simple non-functionating tissue. Simple non-functionating tissue is fibrous tissue, and fibrous tissue is interstitial tissue.

Decay of parenchymatous tissue with interstitial tissue substitution is the dominant feature.

The process of destruction is insidious, covers a long period of time—just as can be expected of tissue, highly organized, permeated and infiltrated with mercury.

The pathology of paresis and tabes does not compare with the pathology of any stage of lues, and since there is nothing to prove that the cicatricial process in these two diseases is due to lues—except a history of previous syphilis, the question reasonably follows: Is mercury responsible in the etiology of dementia paralytica and locomotor ataxia?

The virtue of the chemical properties of mercury on the tissues is not well understood. It is claimed by writers to be an alterative. It is supposed to alter in some way not fully understood tissue metabolism. It might be assumed on such authority that as an alterative it may also be responsible in interference of cell structure as well as of cell function.

6. In the treatment of paresis and tabes we find that anti-syphilitic treatment does harm. If a certain cause provokes an injury, would not an aggravation of the cause result in more injury? Such a conclusion is warranted, therefore, if the administration of mercury in these two diseases does harm, it may reasonably be questioned, is it the etiological factor? But writers declare, sometimes it does good, and the patient shows marked improvement. In a few cases he does, but probably his improved condition was mostly due to the antagonistic action of mercury on a field of active syphilis that in a certain number of clouded cases was responsible for his condition. Then, again, the data must be taken from the

greatest number, and all writers are united that in well-marked cases of paresis specific treatment does harm.

The fact that the administration of mercury does harm in these two diseases gives sufficient reason alone to the question: Is mercury responsible in the etiology of progressive dementia and tabes dorsalis?

7. As quoted in the beginning of this paper, writers are unanimous that syphilis plays the great rôle in the production of paresis and tabes. Syphilis they claim is responsible. But from the above discussion, does not the syphilitic etiology of these diseases appear questionable.

It can not be denied that these patients usually have had syphilis, but neither can it be denied that mercury was not their treatment. It is just as easy to blame syphilis instead of the treatment as to blame specific urethritis for the production of the coccus of Neisser when really the gonococcus is the specific cause of gonorrhea.

That paretics and tabetics are syphilitic is not denied, but that they have been mercurialized is equally true.

It is this question, is mercury or is syphilis responsible in the etiology of dementia paralytica and locomotor ataxia, I hope to have discussed.

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Tumors of the Cerebellum.

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(Concluded from page 26, January Number).

TREATMENT.

From a careful study of the previous findings it is quite evident that the medical treatment of cerebellar growths offers very little or no hope, save in a limited number of cases. In fact, we may say that in by far the greater proportion of the cases, surgery—*early, competent*, surgery—offers practically the *only* hope. It is true that cerebellar surgery is still in its infancy, simply because a few prominent surgeons have contended that cases of cerebellar tumor are inoperable. We are glad to note the fact that even Oppenheim has been forced

to acknowledge that his former views concerning surgical intervention in tumors of the cerebellum need modification. Great honor is due Horsley for his many valuable contributions to brain surgery. Every conscientious writer must pay him homage.

Greater dangers and more serious difficulties are encountered by the surgeon in attempting to expose and remove a cerebellar tumor, than in a growth of the cerebrum. Perhaps, one of the greatest, if not the greatest, danger attendant upon operative procedures upon the cerebellum is that of making undue traction upon the medulla oblongata. Dr. Woolsely has called attention to this fact. In one of his cases the autopsy findings read the latter as the cause of the patient's death. A study of the anatomy of the cerebellum and cerebrum will reveal the fact that practically any portion of the cerebral cortex can be readily and easily reached by means of an osteoplastic flap, while the removal of a considerable portion of the skull below the superior curved line will expose but a very small portion of the surface area—only one-tenth according to Dr. Allen Starr⁴⁰—of the cerebellum; it will not expose the upper surface of the hemisphere that is in relation with the tentorium cerebelli; nor the anterior portion that is in relation with the petrous portion of the temporal bone, nor does it expose the mesial surface of the organ. Dr. Starr has correctly stated that the surface exposed is one that is very rarely the seat of a cerebellar growth. The area thus exposed, however, is quite sufficient to enable the competent surgeon to accurately settle many doubtful points. Personally, I believe that the future will reveal the fact that our present difficulty lies not so much in not being able to remove enough of the occipital bone, as our not knowing the best method of procedure after the exposure has been made.

Normally the cerebellar hemispheres are under considerable tension—in fact, Dr. Frazier⁴¹ has found that when the normal tension is relieved by a reflection of the dura, the cerebellar tissue almost invariably protrudes through the opening. When a tumor exists in any part of the cerebellum or in the cerebellopontile angle the degree of tension is of course greatly increased and the protruded tissue may greatly embarrass the surgeon. The small size of the cavity, the inability to freely displace the cerebellar tissue, the restricted manipulations and the danger of making undue traction upon the

medulla, combine in making the operation quite difficult. So difficult, in fact, that a few years ago Dr. Starr intimated that a tumor in the cerebellopontile angle was inaccessible. At present, however, we know that in some instances cerebellopontile tumors can be successfully removed.

INDICATIONS FOR OPERATION.

Very recently, Dr. Kocher⁴ has stated that there should be less delay in bringing to the surgeon a lesion of the encephalon whether it be a tubercle, a gumma, a neoplasm or an abscess. Dr. Kocher feels confident that there is no more excuse today for delaying surgical intervention in cases of cerebellar tumor because the latter can not be exactly localized, than there would be for declining to operate upon a case of intracranial hemorrhage because the surgeon was not able to determine positively the seat of the clot. Failing in one place to find the tumor, other trephine openings may be made; "how often have we trephined over the anterior branch of the middle meningeal artery, when the autopsy revealed the clot in the posterior branch" Dr. Frazier believes that the indications for surgical intervention in cerebellar lesions are practically the same as in those of the cerebrum. He sees no reason why we are not justified in performing exploratory operations upon the case of suspected cerebral growth as we are upon patients with suspicious visceral tumors; he maintains that postponement of operation should be discountenanced if for no other reason than because of long duration patients with a cerebellar tumor make very poor subjects for operative intervention; the operation is of itself, one of considerable gravity and the condition of the patient should be so good as to enable him to withstand its depressing effect. Dr. Kocher has called attention to the fact that prolonged antisyphilitic treatment in these cases of cerebellar tumor lowers the patients' vitality and renders them especially prone to severe hemorrhage—a very important finding. The best results are attainable only when both internist and surgeon work together and bring the patient to operation before the optic mechanism has been seriously crippled. Dr. Frazier asserts that physicians are too prone to spend months in the fruitless administration of antisyphilitics, or spend an unwarrantable amount of time in an effort to establish a diagnosis beyond peradventure of doubt, or to localize the tumor with

mechanical accuracy; he holds that this inability to accurately locate the tumor is no reason for delay, but rather an indication for early exploratory operation.

Dr. Hudson⁴⁴ acknowledges that it is quite necessary that the surgeon knows whether the tumor is in the median lobe or in the right or left lobe of the cerebellum; whether the tumor is extramedullary or intramedullary; whether it is situated in the anterior portion of the cerebellar fossa or in the posterior portion of the cerebellar fossa, or in the petrous part of the posterior fossa; and to clear up these points Dr. Hudson deems a careful study of the symptoms of prime importance. It is Dr. Frazier's custom to advise operation just so soon as the diagnosis is with reasonable degree of certainty assured, providing other measures have failed and the operation *per se* is not contraindicated. Even the casual observer can see that Dr. Frazier's method offers the patient the best chances and is destined to become universal.

When the patient reaches the surgeon at an hour when the radical removal of the tumor is out of the question, a palliative operation will frequently relieve many of the distressing symptoms and not only prolong the patient's life, but render the latter more pleasant and joyous. Dr. Frazier believes that in any instance where the tumor can not be localized, or in which it can not be reached, or where it can not be removed owing to its size, a palliative operation is not only justifiable, but in some cases it is imperative. He has observed several instances in which a palliative operation relieved the headache, the vertigo, and improved the patient's sight to such a degree that he was able to seek employment and earn his own livelihood. Drs. Mudd, Krause, and others have also observed marked benefit from the palliative operation. In one of Dr. Mudd's cases where the outcome was not at all promising, the patient received very marked benefit, many of the distressing symptoms having almost entirely disappeared.

Without question, the possibility of saving the patient's vision by early surgical intervention is a very strong point—in fact, a most important point in favor of early operation. Every physician should be fully alive to this fact, and hence not wait until the patient is practically blind before he consults the surgeon.

Concerning the anesthetic very little need be said since all are agreed that chloroform is preferable in almost all cases of cerebellar tumors.

OPERATIVE TECHNIC.

Different surgeons employ different postures. Schede for instance, has employed the sitting posture, with the patient leaning well forward. He admits that this is an awkward position but has found it very satisfactory. Any one who has attempted to expose a cerebellar hemisphere can appreciate the difficulty that is experienced in trying to keep the patient upon his side. Dr. Frazier has devised a head-rest that elevates the head and shoulders and that facilitates operative procedures.

In exposing the occipital bone below the superior curved line the incision begins at the tip of the mastoid and passes upward and forward parallel with but just above the superior curved line to the middle; if both hemispheres are to be exposed simultaneously, the incision is, of course, extended to the tip of the opposite mastoid, otherwise it passes vertically downward to enable the surgeon to reflect the flap sufficiently to expose the field of operation. It is especially important that all bleeding points be secured as the incision is made, hence, the latter should be short and not too hasty. The bleeding from the occipital bone may be very profuse but should cause no anxiety since a few pieces of wood or Horsley's wax will stay the hemorrhage. The bleeding is especially severe near the mastoid and in the region of the external occipital protuberance. Experienced surgeons are alive to the fact that simultaneous reflection of the tissues covering the cranial bones will prevent serious hemorrhage from the vessels of the scalp; it also protects the parts.

Since surgeons are agreed that it is not necessary to preserve the overlying bone, and since the bone is often so thin that a trephine would be of no avail, it is customary to remove the bone by means of chisel and Rongeur forceps. At a point midway between the occipital protuberance and the mastoid process the bone is often as thin as cardboard. Poirier says that there is the greatest safety in removing a button of bone; the opening then being enlarged with Rongeur forceps in all directions; inward, to one centimeter of the median line; externally as far as possible without opening the mastoid cells; upward to the lateral sinus, and downward to within one centimeter of the foramen magnum. Before removing the bone in the region of the lateral sinus or of the median line it is very important that a blunt elevator be passed between the dura

and the bone. When the bone has been removed, the mass exposed may not pulsate; it may tend to bulge out of the opening; gentle palpation may give an idea of the site of the growth.

The incision in the dura must be made in such a manner that when the edges are later approximated there will be no danger of adhesions, or a failure of accurate approximation of the incised surfaces. Dr. Frazier recommends that the flap should have its base downward.

Some surgeons advise performing the operation in two stages. The condition of the patient at the time of dural exposure must be the guide. If there is considerable shock, and if the blood-pressure and pulse are not satisfactory it is preferable to permit the patient to react before proceeding further. Dr. Frazier proceeds if no unfavorable symptoms have developed. After the dura has been incised the cerebellar tissue tends to protrude. The surgeon proceeds to explore by means of the finger. If the tumor be situated in the cerebellopontile angle, it may be reached by tapping the ventricle or by excising part of the cerebellar hemisphere. Dr. Frazier favors the removal of a part of the cerebellar hemisphere. He believes that if this procedure be universally adopted it would do much toward increasing the percentage, not only of tumors found, but of tumors removed, and would at the same time reduce the mortality. It must be admitted that large portions of a cerebellar hemisphere have been removed without any producing untoward effect. Drs. Starr, Hudson, von Bergmann, and others have reported such instances. Dr. Hudson's case was especially interesting since a removal of a part of the cerebellar hemisphere was followed by temporary relief and at a subsequent operation the cyst was found—accidentally, perhaps—and the patient was greatly benefited for many years.

Puncture of the ventricle may be resorted to, to relieve intracranial tension, or to enable the surgeon to make a more complete exploration of the cerebellar surfaces. Surgeons are practically unanimous in their condemnation of the practice—a practice that is of questionable propriety and of especial gravity according to Dr. Frazier, and others. In rare instances a small flat retractor will enable the surgeon to locate the tumor but the danger of making undue traction upon the medulla must be ever remembered.

Dr. Frazier believes that the shortest and the best route

to the cerebellopontile angle is along a line parallel with the petrous portion of the temporal bone. He contends that this lateral route, as pointed out by Krause, is preferable to other methods. It is important that the bony opening extend as near to mastoid process as possible.

Dr. von Bergmann prefers lumbar puncture in those cases in which the pressure symptoms are very marked, but the tumor can not be localized. He holds that this procedure is much to be preferred to any other, but that failing in this, recourse should be had to direct puncture of the lateral ventricle. Fürbinger is opposed to lumbar puncture and attributes the deaths that often follow such procedures, to pressure exerted upon the bulb by the arrest of cerebrospinal fluid from the ventricles at the foramen of Majendie.

Dr. Frazier has referred to the advisability of securing continuous or intermediate escape of cerebrospinal fluid from the site of operation. He cites Jaboulay's case in which beneficial results followed the escape of cerebrospinal fluid from a fistula in the cicatrix. The question certainly needs further consideration. It is true that Schwyzer's case tended to favor constant drainage but the question of artificial drainage remains unsettled. Dr. Frazier has also called attention to the fact that the fifth, seventh and eighth nerves are readily exposed in the exploration of the anterior aspects of the cerebellum in the cerebellopontile angle.

Concerning the advisability of performing craniotomy upon both sides and removing the intervening bone, which, of course, necessitates ligation of the occipital sinus, Dr. Frazier is inclined to believe that the operation should be restricted to those cases in which the tumor is believed to occupy a position near the mesial surface. Under any circumstances he regards the two-stage operation necessary.

Kocher, Krause, and others have suggested that the tentorium cerebelli be divided down to the petrous portion of the temporal bone when it has been found necessary to ligate the lateral sinus, but Dr. Frazier does not believe that the improved technic compensates for the additional risk that must thus be entailed. Krause has successfully ligated one of the lateral sinuses.

In all operations upon the cerebellum the technic must be as simple as possible, and devoid of all measures that tend to injure or insult the brain tissue. Personally, I believe that the

surgery of the cerebellum will be markedly advanced during the next few years.

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Some Remarks on the Treatment of Respiratory Diseases in Children.

By JOHN ZAHORSKY, M.D.,

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ACUTE diseases of the respiratory organs, next to diseases of the alimentary canal, are the most frequent pathologic conditions of infancy and childhood. Their prophylaxis and treatment forms one of the most common duties of every practitioner, and, hence, the consideration of this subject from a modern standpoint will be of general interest.

In the first place, it should be recalled that acute diseases of the respiratory organs are manifested by local inflammatory symptoms, that is, redness, swelling, pain, or at least, discomfort, and increased secretion of mucus. In the second place, certain general symptoms, as fever, lassitude, etc., are almost constant accompaniments. The inflammation may be located in any part of the respiratory tube, that is, the nose, nasopharynx, larynx, trachea, bronchial tubes or the air vesicles. Accordingly we apply the names rhinitis, laryngitis, bronchitis, or pneumonitis to this disease depending entirely on the location of the pathologic process.

Most commonly several parts of the respiratory tube are implicated either simultaneously or successively; that is a rhinitis may be followed by a laryngitis, bronchitis by a pneumonia. What is a rhinitis today may be a bronchitis tomorrow, in other words the inflammatory process has a tendency to spread

Read before the Franklin County Medical Association, December 5, 1905.

from the original site. The extent of this spread varies at different times and most markedly in different individuals.

What is the cause of these diseases?

The former prevalent opinion that these diseases were caused by exposure to cold must be almost entirely abandoned. It is true that inhalation of very cold air induces a local anemia which is soon followed by a hyperemia, but these symptoms rapidly disappear and can not be grouped under the terms of our subject. So, also, the etiologic conception of irritating vapors or dust, must, except in rare instances, be thrown aside as having nothing to do with common "colds."

To the family physician nothing is more plain than the fact that common colds are contagious. Where one in a family has a cold, others in the same family catch the disease. A whole school-room of pupils, one after the other, have bronchitis. The school-boy comes home from school with a bad cold, and soon others in the family, even those who have been exposed to cold in no way, have the disease.

We know of but one agent which can cause a contagious disease, and that is the micro organism. Hence, the modern conception of common colds, that is, rhinitis, laryngitis, spasmodic croup, bronchitis and pneumonia is that these are inflammatory processes induced by bacteria; common colds, in other words, are infectious diseases.

There are other reasons than its contagiousness, why the acute respiratory diseases must be caused by bacteria. One is the almost constant presence of fever in infants and children, which is a sign of a toxin circulating in the blood. Another fact is that a relative immunity follows the convalescence of an attack, that is, the child will be free from another attack for awhile. Of course, this immunity will vary in different persons and at different times, but its existence presupposes that the organism formed some antibody in the circulation or in the mucous membrane. The peculiar disposition of the inflammatory process to spread from one point to another also indicates the presences of a living virus.

I must repeat, therefore, that common colds are not due to cold at all, but are produced by some infection.

But why, may you ask, are these diseases more prevalent in the winter seasons? Two reasons may be given, both probably contribute a part. One is that cold diminishes the vital resistance, and local congestion favors the implantation

of the bacteria. But it should not be forgotten that infants and children without the least exposure to dampness and cold will "catch cold" once or twice a year when merely coming in contact with others who have a cold. An exposure to cold air or dampness is only an occasional precursor of these diseases.

My own observation leads me to believe, that in less than 20 per cent of the cases can such an exposure be found.

We should not, therefore, seek the cause of "colds" in taking the usual bath, the change of a garment, or the slight wetting of the feet; but should always ascertain whether or not the patient has been in contact with another who has a "cold," just as in the case of diphtheria we attempt to find the origin of disease.

Another, and probably, the most important predisposing cause, is the circumstance that people live in houses during the cold weather. Here the air is stagnant, and any contamination, either bacterial or chemical, will be more readily transmitted from one person to another in a room with closed doors and windows than in an apartment with doors and windows open. In the summer we practically live out-of-doors all the time, and, hence, respiratory diseases are less frequent. Pure air free from pathogenic bacteria promotes the health of the air passages, just as pure food keeps the alimentary canal healthy. In the case of infants, it is during the summer when the food is most likely to contain many bacteria that digestive disorders are most frequent; on the other hand, in the winter the air is most likely to be infected and respiratory disorders prevail.

There are still other predisposing causes of "colds." One very important one is great fatigue. Another is mental worry; but the nutritive condition of the child is an important factor. The predisposition of rickety children is well-known. Finally, there seems to be an inherent predisposition in many children which can only be assigned to prenatal influences.

We are all acquainted with these children. They frequently acquire a bronchitis which almost invariably assumes a severe form, many times ends in broncho-pneumonia and is painfully protracted. These are the little patients that cause no end of worry to the physician.

What are the bacteria that produce the so-called "colds?" They evidently are not always the same.

The influenza bacillus is well-known in epidemics. Occasionally it is found in sporadic cases, but it is a great error to diagnosticate every case characterized by moderate local symptoms and severe general disturbance as a case of grip. In sporadic cases the diagnosis influenza can not be made without a bacteriological examination.

The next important cause is undoubtedly the diplococcus lanceolatus or pneumococcus. The bronchitis, pharyngitis, otitis and pneumonia are but manifestations of the same infection in different parts of the respiratory tube. In studying a case of pneumonia I invariably inquire as to the condition of the air passages in other members of the family. It is the rule to find others infected by the same bacteria. A child has pneumonia, while its brothers and sisters have or recently had a bronchitis or an angina. A few years ago I made a bacteriological examination of several members of the family in which one person had pneumonia and the diplococcus was found in the bronchitis or tonsillitis of other cases. I am well aware that certain authorities deny the pathogenic qualities of the micrococcus lanceolatus in such cases, but nevertheless I have laid down the dictum that pneumonia is only an accident in a wide spread pneumococcus infection.

What import the micrococcus catarrhalis has in the etiology of these cases is uncertain. It is still possible that a specific microbe initiates the inflammation and the pneumococcus, Friedlanders bacillus, coli bacilli and the pyogenic bacteria are secondary invaders.

A few authorities may be quoted :

Ritchie (*Journal of Pathology and Bacteriology*, 1901) in a study of 49 cases of bronchitis concluded that the disease had an infectious origin. The most important causal bacteria are the diplococci pneumoniae and the streptococci.

Dr. Martha Wollstein a year ago published the findings in 100 cases of bronchopneumonia. In nearly all the primary cases the pneumococcus seemed to be the causative agent.

Having thus briefly sketched the etiology of these diseases and with this new conception, that "colds" are local infections as the underlying principle of a rational therapy have we made any advance from the practical standpoint? Undoubtedly, yes.

As far as the prevention of these diseases is concerned two phases of the problem must be considered: The increase

of the natural powers of resistance, and the isolation of those diseased.

Given a child who catches cold very frequently or whose attacks are always serious or protracted, what can be done to diminish this susceptibility?

While these diseases were regarded as reactions from exposure to cold it is but natural that the cold bath was popular to harden the children. Recent, careful studies by Hecker (*Munch. Med. Woch.*, 1902) tend to overthrow this belief. He found that bathing in cold water does not diminish the tendency to colds in children, but increases the irritability of the nervous system and really, in many cases, increased the susceptibility to "colds." Hence, cold water should only occasionally be used, as in many it improves the circulation and nutrition.

Proper clothing, constant life in the open air, thorough ventilation of the living and sleeping rooms, and bathing according to the constitution of the child are appropriate and often effective measures.

But we should not expect too much from all these means in certain cases. In my own practice, most of the parents are only too anxious to supply all the clothing necessary, but it does not follow that these well-clad children are immune to respiratory diseases; on the contrary, these very children, who avoid every exposure, often prove to be exceedingly susceptible to severe and protracted attacks of bronchitis.

There can be little doubt that the susceptibility to these diseases is intimately connected with the nutrition. Hence, in any given child, who is very susceptible to colds, the nutrition must receive the careful attention. For some time I have been placing these children also on various phosphorus preparations. The compound syrup of phosphate, the compound syrup of hypophosphites, the glycerophosphates and highly phosphorized compounds like lecethin may be used. Of all remedies these have been most satisfactory to increase the resistance of the child to bronchial infections. Other alteratives as, arsenic, iodids and cod liver oil may be also used with benefit.

After all a gradual immunity is established as the child grows older, and the years may do what therapy has failed to accomplish.

The method of isolating the sick or well should always be

considered. Newly born infants, on account of the danger of acute suffocative bronchitis, should not be permitted to be fondled by those who have a "bad cold." Those children who are especially susceptible should also be isolated to some extent. They should not attend school during the early winter when respiratory diseases are most frequent. They must avoid the crowd and must be kept away from other children.

As regards the treatment of these conditions, in general, it may be stated, that when the infectious nature of these diseases is admitted, the impossibility of influencing the course of the disease is a rational deduction. The fact is that we can no more cure a bad cold than we can cure measles. The disease runs its course. The treatment, therefore, is entirely symptomatic, that is pain and discomfort is relieved by anodynes, excessive coughing is subdued, fever is reduced and sleep is promoted. It always takes more than one day to cure a cold. Only nostrum vendors have remedies that cure in one day.

There are, however, a few general principles of treatment. The first is that the inhalation of cold air is rather beneficial than harmful in these cases. In fact, during the inhalation of cold air there is a marked amelioration of symptoms; there is more roominess in the nose and less cough.

The next principle is that changes from cold to warm air must be gradual. Any rapid change will prove deleterious to the local resistance.

The third principle is that moderate exercise is not harmful to these patients as long as they have no elevation in temperature. When fever develops rest in bed is necessary.

I desire to give what medication has been most helpful to me in the last few years.

In Coryza.—Internally, I use camphor and belladonna with quinin. Locally, 1/2 per cent solution of camphor and menthol in oil.

Adenoiditis and Tonsillitis.—Internally, I prescribe pilocarpin hydrochlorid with benzoate of soda, or ammonium salicylate, occasionally aspirin or salipyrin.

Laryngitis.—The usual prescription is potassium iodid with tincture veratrum viride. The latter drug prevents spasmodic croup. Antipyrin is also very beneficial to prevent croupy attacks. Inhalations of tincture of benzin and hot

water are also very helpful in relieving the congestion. Externally, either hot or cold water compresses are used.

Bronchitis.—It is scarcely necessary to point out the variety of medicines that may be used here. Empyricism is still ahead of science in the treatment of bronchitis. Inhalations are very useful. I prefer creosote and camphor to cresolene. Turpentine is also very useful. External applications are sometimes advantageous. I prefer an emollient to a cataplasm. Goose grease is probably as effective as antiphlogistine. There seems little doubt, however, that we can modify the splanchnic nerves by soothing or stimulating the somatic nerves in the skin. A rubbing of goose grease or lard often checks a paroxysm of cough. My usual prescription is guaiacol in lard, 30 minims of the former to 1 ounce of the latter. This is an excellent application to the skin in bronchitis and bronchopneumonia.

Pneumonia.—In children, in the early stages of either a croupous or bronchopneumonia veratrum is often helpful, but it should not be continued long. As a rule, in all severe infections of the respiratory tube, digitalis acts as a good general stimulant. The coal tar antipyretics in many cases seem to inhibit the formation of specific antibodies and the disease becomes more protracted.

The cold bath in pneumonia and bronchopneumonia is much less used than formerly. One or two cold baths may be used when the fever is very high, but repeated bathing with cold water in pneumonia is harmful. The hot bath will be found more to the point, less exhausting, quieting the nervous system, and often cooling the fever somewhat.

The external application of pure guaiacal to the abdomen is a good antipyretic but must be cautiously used. Occasionally a dose of antipyrin or phenacetin may be given, but like the cold bath it should not be continued. I prefer to use Laveran's solution (quinin hydrochlorid and antipyrin) hypodermatically, once or twice daily in cases of hyperpyrexia. Camphor internally, is a fine stimulant both cardiac and general in all cases of pneumonia. The iodids internally, are old remedies, and often seem to assist.

But, after all, good nursing and time occasionally assisted by a dose of medicine does best. The routine administration of medicines in all these diseases is an error. Assist nature

by an occasional stimulant. Persistent stimulation leads to exhaustion.

Posterior Basic Meningitis.

By LOUIS M. WARFIELD, M.D.,

ST. LOUIS, MO.

DR. LOUIS M. WARFIELD reported briefly this case that occurred in an infant about 10 months old. The family history was negative. The child had been ill for two months before admission with wasting and constant vomiting and retraction of the head. The parents also said that the infant did not take notice as it had done, and seemed to have become blind. The condition was characterized by rigidity of the extremities with exaggerated reflexes, marked and progressive emaciation, constant vomiting, increase in size of the head, with retraction of the neck varying in severity from time to time, and progressive blindness. The eyes were glassy, wide open, and staring. No nystagmus was observed, no irregularities of the pupils or strabismus. The infant died about one month after admission making the duration of the illness from time of onset about twelve weeks. Permission to open the skull was given. The brain was soft, the ventricles were markedly distended with clear, limpid fluid. At the base was organized fibrin, showing evidences of a chronic inflammation. The convexity of the brain revealed no pus, only considerable general congestion. Dr. Warfield discussed the differential diagnosis, called attention to the recent work of Koplik which showed that these cases were not cases of a separate disease, but were due to the diplococcus of Weichselbaum. He expressed the opinion that, while further work was necessary to prove conclusively this view, yet enough had been done to prove that this condition was not a separate distinct form of meningitis.

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October 5, 1905.

LEADING ARTICLES.

LOOKING BACK.

By EDMUND A. BABLER, M.D., St. Louis.

(Concluded from page 52, January Number).

Intestines—For duodenal ulcer Robson finds gastroenterostomy alone sufficient. Mayo has reported many cases and has recorded excellent results. In end to lateral anastomosis Gould transforms the circular opening of the open intestine into an oblique one; he then opens the receiving intestine on its free edge two inches, and to the distal end of this cut he stitches, by means of a mattress stitch, the mesenteric border of the entering bowel; guide sutures invert the cut edges and expose the mesenteric third of the entering bowel side by side with a symmetrical portion of the cut edges of the receiving bowel. An over-and-over continuous No. 0 chromic suture unites the two coats. This is reinforced by a seromuscular stitch. Gould modifies the mattress stitch by placing the loop near the cut edges. In end-to-end anastomosis guides are so placed that the mesenteric border will be first developed. In uniting unequal segments of bowel Horsley transforms the circular opening of the smaller segment into an oblique opening. In Robson's new jejunostomy the two limbs are short-circuited about three inches from the top of the loop. The opening in the top of the loop is just sufficiently large enough to admit a small catheter.

In strangulated hernia Brown first exposes the strangulated coil, then makes a supplemental incision in the median line, after protecting the peritoneal contents by means of large gauze pads he delivers the strangulated coil through the latter incision.

In femoral hernia DeGarmo makes the skin opening parallel to the inner side of femoral vessels; the sac is secured and thoroughly evacuated and materially lengthened in order that when ligated the stump will retract within the abdominal cavity; Poupart's ligament is then sutured to the periosteum of the pubic bone by means of kanga

roo tendon. In 110 cases the results have been quite satisfactory. Hammesfohr drills holes in the upper margin of the ramus of the pubis to which latter he unites Poupart's ligament. Polya obliterates the femoral canal by means of the sartorius muscle; he attempts to modify Bassino's operation by placing the cord in a canal formed by the aponeurosis, and by suturing the upper flap of the aponeurosis to Poupart's ligament.

In high rectal cancer, Hartmann closes the anus by pursestring, makes an incision beginning behind the scrotum which divides at level of anus, surrounds the latter, and continues on the left lateral part of the coccyx; the latter is excised; the finger pushes the rectum, involved glands, etc., in front of the sacrum, forward. The rectum is then freed from parts anteriorly; the levator and fascio sacrorecto-genitalis are cut from back to the front with scissors; the rectum is brought down and the opening in peritoneum closed. He never employs inguinal colostomy. He emphasizes the fact that physicians should make rectal examinations earlier and more frequently.

In rectal stricture Lathrop makes a concave incision in front of the anal opening; the extremities of the incision are anteriorly. He then exposes the anterior wall of the rectum, presses the stricture into the opening by means of a steel bougie—Aboule; makes a vertical incision into the rectum; examines the bowel beyond site of stricture; incises posterior wall through anterior incision; unites the upper and lower ends of the posterior vertical incision thereby enlarging the caliber of the gut. The anterior incision is closed in a similar manner.

In prolapsis of the rectum, LaPlace compresses all the tissues of the double thickness of the rectum beyond the margin of the anus by means of seven or eight silk ligatures; the tissues below the latter are then excised and the margins of the anus sutured to the cut extremity of the rectum. The gradual withdrawal of the silk ligatures as the incised surfaces are being approximated by suture enables the surgeon to reduce hemorrhage to a minimum.

The disadvantage of McBurney's new technic, which is a simple modification of the Allingham method, is the fact that but one large hemorrhoid can be removed at a sitting. Two incisions meeting at an acute angle above and below surround the pile; the tumor is dissected up, the pedicle containing the principal artery is ligated, and the incision is then closed from below.

Wallis finds that pruritis ani is frequently due to a small ulcer situated between the two sphincters. Dilatation and cauterization are advocated.

Spleen.—Auvray gains better access to the spleen and secures better post operative results by beginning the incision in the median line, then extending it around under the costal arch. The cartilage of the ninth rib is cut with scissors and each stump elevated, detaching from it the muscular attachments. Davis urges operation in splenomegaly before secondary hepatic cirrhosis occurs. In Schlueter's case of traumatic rupture of the spleen, excision was followed by enlargement of all lymphatic glands.

Cancer of the Uterus.—One of the reasons that this subject has been accorded such universal attention of late is due to the fact that the affection was freely discussed at the International Congress of Arts and Sciences, which convened in St. Louis, in 1904. The one pressing need is earlier diagnosis and earlier, efficient treatment. Physicians must remember that a sanguineous discharge, a profuse leucorrhea, or constant pain may be the earliest symptom. Early vaginal examination is never to be postponed or neglected in these cases. In 94 per cent of the cases the patient is a married woman over 30 years of age. Bleeding, when present, is a very important sign, but its absence must not mislead us. Hemorrhage occurring after the menopause must be looked on with great suspicion. Doubt in the mind of the practitioner should cause him to have uterine scrapings or a section of the cervix promptly examined. Wertheim's new and important teaching that cancer in the cellular tissue is not a metastasis, but a direct local outgrowth from the disease in the uterus, and that this outgrowth can be isolated—even when there is a large mass of cancer in the pelvis apparently involving the bladder and ureters, it yet can often be separated from these important organs and completely extirpated, preventing recurrence—is one of the great advances of 1905. Baisch finds that the glands are involved in about one third of the cases of cancer of the cervix; he remarks that they are affected in a regularly progressive course, and not arbitrarily. The post-operative cystitis that often follows operations for cancer of the uterus may often be prevented by following each catheterization with a saline irrigation.

Fibromyoma of the Uterus.—Pinard believes that failure to permit the reproductive function to evolve to its natural conclusion is the

most important predisposing cause of fibroids. Noble is of the opinion that in the future these tumors will be treated from the standpoint of their history. Early operation seems to be gaining adherents. Webster believes that the size, site, rapidity of growth and character of the tumor as well as the character and severity of the symptoms, regulate the time and type of operative procedure. Clark's method of sterilizing the cervical stump after hysterectomy is to be commended. It is to be remembered, however, that Mudd, Pestalozza, and others have observed cases in which cancerous degeneration of the stump followed supravaginal hysterectomy. Bland-Sutton leaves only the vaginal portion of the uterus. Winter states that a new indication for myomectomy must be in the damage done to the heart.

Prolapsus Uteri.—In partial cases Hayd advocates Alexander's operation and plastic surgery of the vagina and perineum. Hayd's operation lessens the size of the vagina and lengthens it by producing an oblique canal. Careful approximation of the fascia and levator ani are secured. Tweedy brings the broad ligaments together in front of the uterus, then amputates the cervix. The ligaments are further secured in front of the uterus by uniting them to that structure with several fine silk sutures. The fibers of Mackenrodt's ligaments are thus firmly reunited. The fundus of the uterus, with its intervening layer of peritoneum, is secured to the anterior vaginal wall and the anterior colporrhaphy completed. Hegar's colpoperineorrhaphy completes the procedure. In cases of complete procidentia, Crile opens the abdomen and anchors the pelvic ligaments and vagina to the abdominal wall. He has secured excellent results in 8 cases so treated. In cases of partial prolapsus the operation can not be performed. In complete prolapsus Hayd has found Crile's method quite satisfactory.

Retrodeviations.—Bonnifield opens the abdomen, strips the anterior ligaments of peritoneum, folds them once, stitches the folds together with chromicized catgut, pushes the folded portion through the slit in the peritoneum and stitches it to the ligaments again toward its distal end, and then closes the abdomen. Far better results are thus secured than he was able to obtain by former methods. Stark's new technic differs from the Goldspohn operation in the closure of the peritoneal cavity, the suture of the round ligaments to Poupart's ligament, and the disposal of the internal abdominal ring and inguinal canal. The internal ring is closed by suturing the internal oblique-

transversalis muscle and fascia to Poupart's ligament with silk. The round ligament is sutured to Poupart's by means of interrupted fine silk sutures, the first stitch being placed just below the lower border of the internal abdominal ring.

Perineal Lacerations.—Cullingworth's secondary operation for complete rupture resembles Lawson Tait's. The series of incisions represent the letter *H*. The forward incisions will mark the outer boundaries of the vaginal flap, and their length will determine the length of the new perineum. The two backward cuts are quite short; they facilitate 1, the exposure of and 2, the union of the divided ends of the sphincter. Withdrawal of the lateral traction causes the triangular shape of the gap in the torn anterior wall of the rectum to again become apparent. The first suture passed is the buried perineal suture. It braces up the whole perineum and obliterates dead spaces. This suture, which is of silkworm gut, is not tied until later. The rectal tear is repaired with catgut, the vaginal laceration with silkworm. The remaining perineal sutures are of silk. All silkworm sutures are left long. The dressing consists of two small strips of lint anointed with vaselin. Douches are not used unless infection takes place.

Holden presents a modified operation. He denudes a single triangular area, catches up the levator ani and tissues about it by temporary silk sutures, and then employs two figure-of-8 catgut sutures to unite the levator ani to each other and to the vaginal mucosa. Two silkworm sutures are used for the skin, these including the edges of the levator ani muscle on both sides.

Ventrosuspension.—In proper cases this operation is, perhaps, of decided value. Maunsell attempts to overcome many of the objections by uniting the edges of the peritoneal opening to the uterine wall by a continuous suture of fine silk. On the posterior surface of the uterus the line of suture should lie about $\frac{3}{4}$ in. and on the anterior surface about $\frac{1}{2}$ in. from the fundus. The advantages are: 1, Firm support without interfering with mobility; 2, no interference with distention of the bladder; 3, should pregnancy ensue, the peritoneum will accommodate itself to the rising uterus and will contract again after delivery.

It has been found that the results are better in cases of multi- than in those of nullipara.

Genito-Urinary Tract.—Murphy emphasizes the importance of

saving as much of the kidney as is possible. Pelvic dilatation due to ureteral obstruction is not an indication for removal of the kidney. Pauchet states that painless, profuse, spontaneous, hematuria occurring in a young patient should always suggest primary renal tuberculosis. Kelly finds that when aeroscopic examination of the bladder shows one healthy ureteral orifice, the case promises well. Before a tuberculous kidney is removed the condition of the remaining organ must be determined. In suitable cases early nephrectomy is favored by Richardson, Kelly, Pauchet and others. Gibson condemns drainage of a tuberculous kidney. Casper does not consider great debility and general ill health contraindications to operation.

Thorndike's researches indicate that the collateral circulation which follows renal decapsulation is not sufficient to materially affect the renal tissue. Croftan holds that no true case of Bright's disease has been permanently benefited by operation on the kidneys.

Longyear asserts that the ligamentous union of kidney to bowel is the most important factor in the etiology of nephroptosis. Treves advocates a carefully padded metal plate which exercises pressure upon the abdominal wall by means of two springs. In 95 per cent of 300 cases of nephroptosis it held the kidneys in place.

By exposing the lower end of the ureter through an incision in the vaginal vault, freeing the former from the bladder, and gradually working so that the two fingers in the lower incision and two in the nephrectomy incision met, Schwyzer succeeded in removing the kidney with the entire ureter attached. In men, he exposes the lower end of the ureter by means of a perineal incision. Vaughan prefers, when possible, uretero-vesical anastomosis to uretero-ureteral since stricture less frequently occurs and the operation is performed with greater ease.

Schwyzzer's experience with extirpation of the bladder causes him to believe that the ureters should not be implanted in the rectum but should be left where they open into the retroperitoneal vesical space as advocated by McCosh.

In extrophy of the bladder, Muscatello transplants the part of the bladder contained in the trigone and the mouths of the ureters, in an excluded portion of the sigmoid somewhat after Mueller's method. The top of the blind pouch formed by the excluded part of the colon is fastened with a few stitches to the colon above the anastomosis.

Wilder has found that the most constant symptom of sarcoma of the bladder is hematuria ; next, stranguary, frequency of, and difficulty in, urination, small stream, and purulent urine.

In cases of incontinence of urine due to parturition, Dudley denudes a horseshoe shaped surface between the meatus urinarus and the clitoris, and on either side of the urethra throughout the entire length of the latter. The cut edges are then approximated thereby drawing the meatus up to a point near the clitoris.

Mudd expresses the consensus of opinion when he urges earlier operation in prostatic obstruction. He says : " Only too often is the sufferer introduced to catheter life with all its attendant dangers." Obstruction calls for radical treatment. Personally, I believe that the operative technic employed should be regulated by the character and site of the growth and the conditions in general (Babler).

In orchidopexy, Beck pulls the freed testicle down into a pocket prepared for it in the scrotum, then keep it there by means of a flap dissected from the outer margin of the inguinal ring, the flap being turned down and attached to the opposite layer. Keetley sutures the gubernaculum testis with strong catgut to the fascia lata of the thigh. The testicle is left attached for five months.

In varicocele, Aguirre pushes the testicles toward the inguinal canal, applies a clamp-forceps crosswise thereby pinching up that part of the scrotum to be resected, excises, removes the forceps, ligates bleeding vessels, isolates and resects varicose vessels, and sutures the scrotal edges with catgut.

Nervous System.—Surgery of the nervous system has been accorded very great consideration during the year. Schultze asserts that a nerve regenerates and grows just like a muscle.

Nicholson is a strong advocate of the employment of celluloid plates for closing defects resulting from operations on the skull. Cushing believes that a tense fontanel is the chief symptom of intracranial hemorrhage in the newborn.

Delagénière reports two cases of epilepsy cured by ligation of the longitudinal sinus near its end. The technic is similar to that of ligation of the saphena for superficial varices. The first patient's sinus was ligated because it was accidentally injured. He believes that the seizures may be the result of a permanent dilatation of the veins on the surface of the hemispheres, causing irritation of the cortex. Of

84 cases of epilepsy operated on, Nash found that 25 were cured for at least one year, 20 for less than a year, while 28 received no benefit. Only 3 of 13 cases of general epilepsy of traumatic origin were cured. Bullard has observed that the results of operation for epilepsy may be long delayed.

In operations on the brain, Codman advises operation at a distance from the motor areas, since the same relief from pressure symptoms is obtained, and the danger of injury to the cortex or of hernia cerebri avoided.

The findings of Mills, Spiller, Frazier, and others, clearly demonstrate that the surgical treatment of cerebellar tumors demands more careful consideration. Operation should be performed earlier, hence, the diagnosis must be made earlier.

Concerning spinal injuries, Burrell says: "Unless it is perfectly clear that the cord is irremediably damaged, an open operation to establish the condition of the cord and to relieve pressure is imperative as soon as surgical shock has been recovered from." He adds that in many instances it is impossible to state primarily the true condition of the cord except by operation. In Fowler's interesting case of gunshot injury of the spine with complete severance of the cord, prompt laminectomy and suturing of the severed ends was followed by excellent results. In Shirres' marvelous case, a section of dog's spine was transplanted into the gap eighteen months after the accident. Sensation in a measure followed. Shirres does not say that the section of cord lived or that it started regeneration. Some regeneration was found to have taken place at the autopsy.

In facial palsy, Villar prefers to anastomose the facial with the hypoglossal rather than with the spinal accessory as originally advised by Ballance and Stewart in 1895. He believes that the danger of atrophy and paralysis of the shoulder or the synergizing of its muscles with those of the face are avoided. Frazier, Clark, Taylor, and others, have recorded good results by employing the method followed by Villar.

Cushing has extensively considered the operative treatment of major neuralgia of the trigeminal nerve. His excellent monograph is worthy of the most painstaking consideration. He reaches the ganglion by means of the median direct method as described by Lexiner and himself. The original should be consulted.

Ankylosis.—The recent pioneer work done by Murphy deserves

special consideration and study. The original should be consulted. Murphy has been able, by the interposition of fascia and muscle, covered with a layer of adipose tissue, to produce practically normal joints with capsules and collagen intra articular fluid.

The flattering results obtained by Moore and others with Mosetig's bone material in treating tuberculous joints have led me to believe that the material may be found of great value in the treatment of ankylosis. Mobilization under ether could be followed by the injection of Mosetig's material into the joint thereby keeping the surfaces from becoming again united (Babler).

Arthrotomy.—Andrews presents a new method of arthrotomy for the treatment of old, unreduced, dislocation of the shoulder joint.

Tuberculous Joints.—Moore believes that cases of tuberculous joints can now be treated successfully with Mosetig's material in which formerly amputation was resorted to. Mosetig's results in 537 cases were quite flattering. Lorenz treats early cases of hip disease with a plaster dressing which fixes the hip, the knee remaining free, and the leg accessible for massage. Later the plaster is supplanted by a leather splint. Massage, active and passive extension movements follow. A high shoe equalizes the abduction lengthening.

In acute tuberculous spondylitis, Ashley employs extension made on the head and arms, and counterextension made on the feet while the kyphosis is gently pressed downward until about, or quite, obliterated; a stockinett shirt is applied over a rubbing bandage; two felt pads protect the anterior superior spines; a layer of sheet wadding and a light, closely fitting plaster jacket extending from the top of the sternum to the symphysis pubis are applied. A Whitman frame is bent to suit the form of the cast. After hardening, an oblong fenestra is cut out in front extending from the center of the gladiolus to about two inches below the umbilicus. In high Pott's disease Eikenbary constructs a celluloid brace which accurately fits the body, the neck, and the posterior and lateral aspects of the head.

Poncet and Leriche describe a form of tuberculous arthritis which shows a tendency to plastic development, and appears to be of rheumatic origin. It is, however, tuberculous. The subjects are all tuberculous, although the affection may be the first and sole manifestation of the disease for a long time. Radioscopy and the indirect test of Mericeaux will aid in the diagnosis.

The open air treatment of surgical tuberculosis in children deserves more attention. The results are quite satisfactory and the method should be more universally employed. The English appreciate this fact.

Hallux Valgus.—Wilson removes the projecting portion of the head of the metatarsal bone, after excision of the inflammatory bursa. The great toe is kept in proper position by means of a plantar splint. Two weeks after operation passive movements are begun. The advantages are obvious.

Flat-Foot.—Wilson and Patterson present a technic which is really an adaptation of the Wolfe operation for paralytic valgus. An arthrodesis of the astragaloscaphoid joint and the transplantation of the tendon of the extensor proprius hallucis through a hole drilled in the scaphoid bone, yielded good results.

Fractures.—The results obtained by Moore in treating fracture of the femoral neck after the method devised by Maxwell were very satisfactory. The patient is anesthetized, the thigh flexed upon the body and lifted up so as to pull the psoas and iliacus muscles away from the seat of fracture; extension is kept up while the limb is being brought down to its natural position; a pull of from 15 to 25 pounds is applied by means of Buck's extension. Another pull of from 10 to 15 pounds is then applied to the inner side of the upper end of the thigh by weight and pulley. The direction of the latter pull is upward and outward. The elevation of the side pulley must be such as to overcome the outward rotation. Stiffening of the knee is prevented by removing the weights ever three or four days and flexing the knee. Bony union has thus been secured in practically all cases of fracture of the femoral neck.

Codman and Chase found that in the large majority of carpal injuries a simple fracture of the scaphoid or an anterior dislocation of the semilunar occurs. In fracture of the scaphoid there is a history of a fall on the extended hand, a localized swelling in the radial half of the wrist joint is present, there is acute tenderness in the anatomic snuff-box when the hand is abducted, there is limitation of extension by muscular spasm, the overcoming of which by force causes considerable pain. The fracture should be treated by immediate immobilization. In old cases it may be advisable to remove the proximal half of the fractured bone.

Matas and Russ have each presented an interdental splint for treatment of fracture of the inferior maxilla.

Dislocations.—Authorities differ widely as to the value of the Lorenz method in the treatment of congenital dislocation of the hip. That too much has been anticipated, all agree. Clarke says that the dangers of the method have been greatly exaggerated. Mueller emphasizes the fact that the method is inapplicable in many cases; or rather that it should be employed only in suitable cases. Mueller claims that 75 per cent of cures is possible by the Lorenz method. Lloyd argues that in congenital dislocation of the hip an absolute cure is practically impossible, but he adds that immense improvement by treatment can usually be attained. Sherman strongly advocates the open method.

Exophthalmic Goiter.—Lanz is confident that the true functions of the thyroid remain an open question. In goats the removal is followed by decrease in sexual and reproductive capacity. The number of offspring being quite small and seldom fully matured sexually. They show many of the features of cretinism. Delore has observed 14 cases of cancer of the thyroid. He believes that there is a close connection between the cancer and a preceding goiter. Park is of the opinion that we should regard Graves' disease as due rather to atrophy of the parathyroids than to excess of the thyroid or of its secretion.

Huntington, Barker, and others agree that operation should not be too long delayed. Kocher admits that the iodine treatment is rarely of any value. In 223 patients reported by Riedel the method of local anesthesia was found to differ from the general as greatly as day differs from night.

Mammary Cancer.—Handley presents convincing evidence to show that cancer is not transmitted by the blood but by the lymph vessels. The methods of transmission are divided into external or parietal dissemination, and internal or visceral dissemination. He believes that a recognition of the dangers of epigastric invasion and the adoption of precise means for the prevention will further reduce the mortality from mammary cancer. The usual incision should be prolonged downward over the linea alba for about two inches, the flaps undermined, and the fascia excised as far down as a horizontal line running two inches below the ensiform cartilage, or even lower if the growth is in the inferior part of the breast.

The extensive researches of Warren and others fully corroborate the belief that a tumor should never be permitted to grow in a woman's breast. Early removal, immediate examination of a section of the growth, followed by a Halstead operation if the specimen be found malignant, appears to be the only correct manner of treating these cases. Warren strongly advises exploration of the gland through a Thomas incision. His modification of the Halstead operation has the probable advantage that 9/10 of the wound is not exposed, nor in fact touched by an instrument until the close of the operation.

NOTE.—Lack of space prevents a presentation of the bibliography upon which this review is based, but I shall be glad to furnish any of the references on application.

[617 Euclid Av.]

THE OFFICIAL ANTIPYRETICS.

Only one new antipyretic has been added in the New Pharmacopeia; the name acetphenetidinum, we fear, will require time to be assimilated into our habits of thought. Excepting a large number of febrifuges, and diaphoretics which have a mild antipyretic action, the Pharmacopeia restricts us to three coaltar antipyretics; acetanilid, acetphenetidinum, and antipyrin. Phenylis salicylas (Salol) probably should not be classed among this lot.

In order to prevent the depressing influence of acetanilid, pulvis acetanili compositus has been made official. The composition of the compound acetanilid powder is as follows: Acetanilid, 70; caffeine, 10; sodium bicarbonate, 20 parts.

We are not sure but that these four antipyretics will accomplish all that can be expected from coaltar antipyretics. It is still unproven whether a large number of recent synthetic antipyretics are in any way superior, although aspirin seems to be quite a favorite with many physicians at present.

In this connection it may be profitable to make a comparison of the therapeutic action of the three antipyretics. All are antipyretic and analgesic. Acetanilid is most liable to produce methemaglobinemia, and this is often mistaken for cardiac depression. The addition of caffeine and sodium bicarbonate does not prevent this tendency to produce cyanosis.

Antipyrin is more analgesic than either acetphenetidin or acetanilid since it can be given in relatively larger doses. Yet, all depress the heart and are more or less dangerous in cardiac asthenia.

In the infectious diseases, these antipyretics often seem to inhibit those processes which overcome infection; hence, their prolonged administration in the infectious fever is contraindicated. Yet, antipyrin has been found very useful in septicemia and Klemperer recommends its use in certain forms of typhoid fever when the baths can not be used effectively. Acetanilid has received the sanction of several writers as a valuable drug in the malarial fevers as an adjuvant to quinin.

The average dose of these drugs (U. S. P.) is as follows:

Acetanilid, grains 4; acetphenetidin, grains 7.5; antipyrin, grains 4.

Personally, we feel that the average dose of acetphenetidin is given too high, a safer dose would be five grains. On the other hand, the dose of antipyrin is too small; better average dose would be grains 7.5. Locally, these drugs act as antiseptics, acetanilid can be used on granulating wounds. Antipyrin is more anesthetic than acetanilid, yet, the latter will frequently quiet an irritable stomach.

It should always be borne in mind that the harmful effect of these drugs can not be entirely obviated by the addition of a cardiac stimulant.

ANTISEPTIC DUSTING POWDERS.

Antiseptic powders are extensively used in wounds to prevent the putrefaction of the fluids and inhibit the growth of pyogenic bacteria. Many, also, seem to have a drying effect. What does the New Pharmacopeia offer?

The Pharmacopeia of 1890 contained quite a number of powders which are valuable, *e.g.*, boric acid, acetanilid, bismuth salts, iodoform, etc. In the Eighth Decennial Revision two other valuable powders have been added

The first of these is iodol, whose chemical name is tetraiodopyrrol, and made by the direct action of iodine on the base pyrrol in the presence of alcohol. It is a light grayish-brown, odorless and tasteless powder, almost insoluble in water but soluble in fixed oils. It

contains 89 per cent of iodine, and is a valuable antiseptic powder, with less toxic power than iodoform.

An addition which is still more valuable, is thymolis iodid, which is extensively used under the name of aristol. This combines the antiseptic power of thymol and iodine. It is a bright, chocolate-colored, bulky powder, almost tasteless and having a slight aromatic odor. It is insoluble in water and glycerin, soluble with difficulty in alcohol, but readily soluble in fatty oils, ether, vaseline, chloroform and collodion.

THE TREATMENT OF CORYZA IN NURSLINGS.

Young infants can not breathe through the mouth, as the space between the dorsum of the tongue and the margin of the soft palate is very narrow, hence, any occlusion of the nasal passages interferes with nursing and the struggling little ones can not sleep. Moreover, as the secretions accumulate in the post nasal space infection of the Eustachian tube with its consequent otitis media is a very common sequel. The imperfect respiration must necessarily have a deleterious effect on oxygenation and pulmonary expansion. Therefore, pulmonary sequelæ are by no means uncommon.

The physician, therefore, will always institute treatment in these cases. Internally the following is advantageous:

R. Spts. camphoræ..... ℥v
 Tr. belladonnæ..... ℥ij
 Quinin sulphat.. gr.ijj
 Syrup tolutani..... q.s. ad 3j

M. Sig.—One-half teaspoonful every three hours.

The relief of the immediate symptoms is best assured by local treatment. The following is a favorite prescription:

R. Menthol.....
 Camphor..... aa gr.j
 Petrolati liquid..... 3j

M. Sig.—One drop in each nostril several times a day.

The menthol and camphor increase the roominess of the meatus and usually afford prompt relief. The oil may be introduced by a small cotton tampon or preferably a bit of cotton on an applicator.

Ballin (*Therap. d. Gegenw.*, 1905) contributes a valuable article

on this subject. This author prefers adrenalin preparations for local use. He advises that small cotton tampons be soaked in adrenalin solution and introduced into the nostrils, where they are allowed to remain for two or three minutes. The mucous membranes become anemic and the swelling of the turbinated bodies is very much reduced. The application must be repeated every four hours.

When the discharge is mucopurulent or even bloody an anti septic must be used. Ballin recommends the instillation of a solution of nitrate of silver ($1/4$ to 1 per cent), but we prefer to use the organic silver compounds, *e.g.* argyrol or protargol. The former is not irritating and can be used in five per cent solution. One or two drops are allowed to flow into the meatus twice daily.

EDITORIAL COMMENT.

The Herter Lectures.

Dr. Hans Meyer, Professor of Pharmacology in the University of Vienna, delivered the Herter Lectures at the Johns Hopkins Medical School last October. In this day when so much attention is given to etiology and pathology, it is gratifying to find an enthusiast in physiological pharmacology. There is a movement in certain quarters to abandon the use of drugs entirely, and yet our greatest therapeutic triumphs are obtained by proper medication. Empiricism is still far ahead of pharmacology, but enthusiasm in the sense of Meyer may soon bring up this laggard science. What is especially striking is the remarkable contributions made by pharmacology, not to therapeutics, but to physiology. It is to this latter aspect that Hans Meyer has directed our attention.

Preservation of Milk by Hydrogen Peroxid.

The search for the ideal antiseptic which will inhibit the growth of bacteria and yet be harmless to the human organism continues with unusual vigor. There are many general reasons why even a harmless antiseptic is objectionable, one of which is that it serves to hide contamination of the milk without destroying the infectious agent. But if any antiseptic at any time may be employed it seems that the dis-

covery of Baumann that hydrogen peroxid in the strength of 0.35 per mille preserves milk for several days, is worthy of special notice. We are not willing, however, to heat the milk up to 50°C. in order to bring out the bactericidal properties, since the methods of heating are too much abused. But this new preservative merits attention and further experiments.

Cause of Death After Burns.

Why should intestinal ulceration following extensive burns on the skin? What is the cause of death after burns? These and similar questions Pfeiffer has attempted to solve in an experimental manner on animals. He discovered a toxin which, circulating in the blood, causes cerebral symptoms and degeneration in the kidneys, heart and liver with ulceration of the stomach and intestine. The urine of such animals is very toxic to other animals. The toxin has a singular affinity for the intestinal mucosa. But the source of this toxin was unfortunately not exactly determined, although he surmises that it must originate in the altered proteid of the burned area.

Pernicious Anemia.

In a recent and excellent monograph, Bunting (*Bull Johns Hopkins Hos.*) states that he does not deem it necessary to assume any specific predisposition to anemia, at least not a predisposition with a pathological condition of the marrow as a basis. A disproportion between the resisting power of the individual and the strength of the pathological agent produces the anemic state—a disproportion shown by an inability of the bone marrow to generate a sufficient number of red cells to supply the deficiency. The disproportion is especially marked in the so-called "aplastic" cases, in which after death the marrow is found to be fatty and with practically no sign of regeneration. It would seem as though the variability in reaction depends more on a general lack of resistance on the part of the individual than to any special predisposition or weakness of the bone marrow. It is obvious that an anemia may be produced: 1, by insufficient or defective blood formation; 2, by excessive loss of red blood cells from the circulation; 3, by excessive destruction of red cells or, 4, by a combination of the preceding factors or any two of them.

Bunting believes that the theory advanced by Lazarus, that the megaloblastic transformation of the marrow is due to the presence of some toxic substance, approaches most closely the true solution of the question of pathogenesis. The absorption of the toxic substance, which is probably of intestinal origin, which acts on the circulating blood, producing hemolysis and through the circulation, also on the marrow, resulting in a faulty hyperplasia.

Bunting has made extensive experiments and concludes that pernicious anemia is probably due to a toxin which destroys the red cells both in the circulation and in the marrow so that the erythrogenetic groups are reduced more or less to the megaloblastic centers, diminishing greatly the regenerative power of the marrow, and resulting in a discharge of megaloblastic cells in the hasty effort to supply the needs of the circulation. Thus, the regular orderly development of the groups of the marrow cells is interfered with and a short cut is taken from the megaloblast to the macrocyte, an imperfect, immature cell, as is shown by the polychromatophilia and granular basophilia.

Heredity a Delusion.

Volumes have been written to explain the mystery of what is termed heredity, and Lamarck, Darwin, Weismann and many others have offered us theories of heredity; now comes Major Woodruff (*Am. Med.*) and startles us by announcing that there is no such thing as heredity. He declares that every peculiarity of the organism is a response to external conditions.

Variations and modifications are really identical, asserts this bold physiologist, although the proof is rather meager. The parent cells remain the same as before and grow up into an adult which resembles the parent, any change is induced by environment. It is unnecessary to explain this resemblance by the term heredity any more than to explain why a small piece of iron is like a large mass from which it has been cut. We fear his simile is rather strained. It is one thing to speak of a mass of iron, quite another to show why a small microscopic bit of protoplasm taken from two individuals should form an adult which resembles one or the other, or both.

His theory is both startling and interesting, but it is very questionable that it will receive recognition from modern biologists.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of October 5, 1905; Dr. John Green, Jr.,
President, in the Chair.*

Dr. LOUIS M. WARFIELD, reported a case (see page 87, this issue) of

Posterior Basic Meningitis.

DISCUSSION.

Dr. ZAHORSKY had seen probably three cases in infants in which that diagnosis was made. None of the cases were thoroughly studied. One occurred in the Bethesda Foundling Home. It was an infant about six months old. Gradually the typical symptoms developed. The child died but no autopsy was performed. Another case in which Dr. Zahorsky had made such a diagnosis, but which recovered, had occurred in his private practice about a year ago. It was an infant five months old, cried a great deal, was bottle-fed, was somnolent. It had one convulsion, would not sleep, there was some chronic digestive disturbance but most noticeable was the enlargement of the head. There was no fever. One physician here who has a large practice among children pronounced it a case of congenital hydrocephalus. In certain rachitic cases some enlargement of the head occurs together with an increase in the cerebrospinal fluid. In this case the enlargement was marked. There was rigidity of the muscles, increased patellar reflexes and quite a little retraction of the head. Fortunately, after two or three months the child gradually improved and got well. Another case was the child of a physician of this city. After having considerable trouble with its nutrition for a month or six weeks it suddenly within a few days developed an acute hydrocephalus. The child grew worse very rapidly and died. The speaker could not say positively that this was a case of acute posterior basic meningitis. A culture

taken from the fluid was negative. There was no fever. No autopsy was made. But the question was, might this not have been a very rapid, serous meningitis? It was sometimes very difficult to differentiate tubercular meningitis from congenital hydrocephalus, and then, again, from serous meningitis. As far as the literature was concerned, and Still's work in particular, Dr. Zahorsky had not yet been convinced that the infection was a modified form of the diplococcus intracellularis in all cases. He regarded the evidence as yet inconclusive.

Dr. HOGE did not quite understand, from the description of this case and what could be seen of the specimen, why it should be called distinctively a posterior basic meningitis. Possibly in the fresh state the enlargement in the basic vessels might have been more marked, but in examining the specimen he could not distinguish any special thickening about the membranes of the base. The symptoms were no doubt largely due to hydrocephalus. The cranial nerves were apparently not compressed by an exudate. It was unfortunate that an examination could not have been made of the spinal meninges. Probably the process would have been found to extend to the spinal meninges, showing a cerebrospinal meningitis.

Dr. TUTTLE thought there was too much of a tendency in medicine to try to get up new diseases and this posterior basic meningitis was a British invention, so to speak. It seemed to have been described there and most of the cases were reported there. Every one knew what a wonderful difference there was between certain cases of epidemic cerebrospinal meningitis. The fulminant cases sometimes died within two days, others resulted in a chronic hydrocephalus lasting possibly two years. So far, the bacteriology of neither disease had been so positively settled as to enable one to say that this was merely a phase of cerebrospinal meningitis, yet, the evidence seemed to point that way. Last winter there had been in the East one of the worst epidemics of cerebrospinal meningitis ever known, and though there had been no such epidemic here, yet, sporadic cases were more likely to occur in other districts during one of the epidemics. In a discussion of the subject before the British Medical Association last year Dr. Osler had said he was convinced that this was only a phase of cerebrospinal meningitis.

The PRESIDENT asked if there had been an examination of the eye

grounds or whether the only evidence of the failure of vision was that the child did not blink when the hand was brought suddenly up to the eyes?

Dr. WARFIELD, replying to Dr. Green's question, said there had been no examination of the eye. It was interesting to note that Thursfield in the *Lancet*, 1901, took the view that Still does. He said, also, that there was an optic neuritis. Lees in a report of 94 or 95 cases said there was no optic neuritis. So far as he could learn, Dr. Warfield thought this was merely a form of cerebrospinal meningitis that took on this unusual symptom complex in children under one year old. What bacteriological work had been done by the Americans went to show that it was due to the diplococcus which was the cause of cerebrospinal meningitis, that in acute cases one might find this organism while in chronic cases the picture was simply one of chronic meningitis. There was not a great amount of evidence to show that the diseases were the same though the probabilities were that the accumulation of evidence would tend to show that they were.

*Meeting of October 19, 1905; Dr. John Green, Jr.,
President, in the Chair.*

Dr. O. L. WOLTER read a paper (see page 65, this issue) entitled

**Is Mercury or Syphilis Responsible in the Etiology of
Dementia Paralytica and Locomotor Ataxia?**

DISCUSSION.

Dr. JACOBSON thought Dr. Wolter argued from the wrong premises. Hebra and others had made extensive experiments in a large number of cases. They gave large inunctions of mercurial ointment to healthy people, the patients were watched for several years and no injurious results followed. Von Zissel who had a large clinic in Vienna, in his expectant treatment gave neither mercury or iodids, simply treating the local conditions and looking after the hygienic conditions of the patient. A proportion of these patients developed nervous diseases but not a larger proportion than those taking the iodids and mercury. Those facts alone were enough to prove that Dr. Wolter was wrong. Fournier had stated that chronic nervous conditions de-

veloped in those patients who had received no antisyphilitic treatment at all. He also stated that those having severe relapses improved rapidly under mercurial treatment. Erb and others believed that syphilis was one of the important factors though he also took into consideration other factors, such as exposure to cold, malarial fever, etc. He had made the surprising statement that women never had locomotor ataxia. Dr. Jacobson did not understand why Dr. Wolter had picked out posterior spinal sclerosis as being caused by mercury, why not include myelitis and other nervous affections following syphilis? He could not agree that syphilis was not the cause of these conditions. Negroes, he believed, did not have dementia paralytica because they do not worry and do not use their brains very much and with rare exceptions, their cerebral nerve centers were not exhausted by over-use. Actors, who burned the candle at both ends frequently suffered with paresis. These people studied much and slept little, and over indulged in all ways. Negroes are peculiar in many ways. They rarely have stone in the bladder or a renal calculus. Gowers had reported a case of congenital syphilis in an eight year old boy in which there were brain and cord lesions. Gummata were found at the base of the brain and there was an endarteritis of the cerebral vessels and this patient had had no mercurial treatment at all

Dr. DRECHSLER thought that one of the reasons the negro race was not afflicted with locomotor ataxia was that he did not live long enough to get it. At the hospital whenever a negro was to be operated upon they had always looked for signs of syphilis and had invariably found it. The negro men who were always fighting and in all sorts of trouble, when they had an attack of lues, did not live long enough to get locomotor ataxia, usually dying of some tubercular abscess or some kidney affection. Down South there were old darkies 90 years old but the present generation would not live that long. The speaker had under his observation at this time a case of locomotor ataxia in which there was no history of syphilis, though the patient was a reasonable man and would be willing to give such information.

Dr. BLISS said that in regard to the occurrence of locomotor ataxia and paresis in women, he had been trying to recall how many cases he had seen in women and he thought he had a record of at least five cases of locomotor ataxia. He has at this time two cases. He had never seen a case of paresis in a woman. He was not under the

impression that syphilitic women took less vigorous treatment than men. Dana and other neurologists had advocated the use of hypodermic injections of benzoate of mercury in very early cases of tabes. Two years ago the speaker had had a case of tabes in a very early stage. The patient had a stammering bladder, pupils rigid to light, reduced knee jerks and anesthesia. His station was moderately good and walk fairly good, weight 175 pounds, height six feet, five inches. He absolutely denied having had syphilis but acknowledged a gonorrhea which had lasted a year. He objected seriously to antisiphilitic treatment but Dr. Bliss had used vigorous inunctions of mercury and after five or six months the result was a cure except that there was no change in the pupil. The patient had remained well. Other instances in which this method was employed were similar. It was firmly held by some observers that there were cases of early paresis and tabes that could be stopped by the use of mercury. Dr. Bliss believed there were a considerable number of cases of tabes and paresis which had never had a considerable amount of mercurial treatment, and he believed there were cases of locomotor ataxia which had not had syphilis and consequently had had no mercurial treatment. While it was not now claimed that syphilis was the sole cause of locomotor ataxia and paresis, it was certainly found in an immense proportion of cases. It was equally true, also, that a large number of patients who had been treated vigorously for syphilis had never developed locomotor ataxia or paresis.

Dr. LIPPE said that in discussing anything theoretically much could always be said *pro and con*, but in this instance it did seem to him possible that there was something in Dr. Wolter's argument. The mere fact that a man was so unfortunate as to have tabes or paralysis did not warrant the presumption that the individual was a liar and had had syphilis. That the drug of an atomic weight of 200 absorbed and carried to the ganglionic cells might destroy them, thus producing sclerosis, seemed reasonable. The argument put forth by the Doctor was certainly very logical.

Dr. BOEHM had seen within the last three years a number of cases of tabes and had been in correspondence with one of the most scientific men at Hot Springs, Arkansas, who had given this subject much study. This gentlemen went into the matter thoroughly. He made it a rule in all cases to make a hemoglobin estimation at once,

also a blood count, before administering mercury. About a year and a half ago the speaker had been told that this gentlemen felt that a good many cases of tabes that came to him were probably overtreated by their physicians at home with specific treatment. On the other hand there were many who had not received syphilitic treatment. In regard to the early recognition of syphilis, patients sometimes presented themselves at clinics who were unaware of a previous urethral chancre. Urethral chancre was very common if looked for. Physicians did not use their microscopes often enough. In a case of urethritis the physician should at least make a smear preparation and if he failed to find the gonococcus he should at least try to find what was the cause of that urethritis. Even when the urethroscope failed to reveal a nodule there would often be found a plaque. The same kind of mucous patches occurred in the urethra as in the mouth. There were cases on record of locomotor ataxia giving no syphilitic history that, if they had been treated by an observing physician when they had the primary lesion, this also would have been found. The lesion might be in the intestinal or gastric mucous membrane. All genito-urinary clinics in this country were very large and the tendency was to rush the cases through. In the clinic with which the speaker had been connected they had preferred to treat a few cases thoroughly. Their records for the last six years would show some very interesting developments.

Often when a patient denied any knowledge of specific infection it was due, not so much to his intent to deceive as to the carelessness of the medical examiner who had looked him over. This point of administering mercury was something he was working over, trying to determine how far the mercury should be pushed, examining the blood periodically during the administration of the mercury. Syphilis was something that required to be treated scientifically. In some of the larger cities there were men who devoted their entire time to it. It would become more the practice as more was learned about mercury to make blood examinations during its administration. Many tabetic patients presented themselves with a primary bladder trouble. From the description one would think there was a constriction of the neck of the bladder. Whether syphilis or mercury was the cause of tabes, would only be explained by years of close study. After a number of years' experience every observing physician could recall cases

in which he had been able to satisfy himself that the individual was syphilitic though the patient was unable to say that he had ever had a primary lesion. The fact that there was no such history did not prove that the patient was not syphilitic. Again, the fact that tabes often did not react favorably to syphilitic treatment did not prove that it was not due to a syphilitic lesion. It was agreed that in sclerosis the cicatricial tissue was the result of an inflammatory condition. If this was due to syphilis, in the early stages some benefit might be expected from syphilitic treatment, but if the case had progressed until the tissue was destroyed, what result could be expected from syphilitic treatment? Because antisymphilitic treatment did not relieve tabes did not prove that the primary cause was not syphilis.

The PRESIDENT asked Dr. Bliss if his experience accorded with Dr. Wolter's in that the negro race was relatively immune from tabes and parietic dementia.

Dr. BLISS could not recall ever having seen a case of parietic dementia or locomotor ataxia in a negro. He had an impression that he had done so, but could not recall the instance. Some five years ago Osler had stated that he had never seen a case of diabetes mellitus in the negro. When this statement came to Dr. Bliss's attention he happened to observe a case in a negro woman and he had written Dr. Osler about it. Dr. Osler replied that since the writing his article he had observed several such cases. The question of locomotor ataxia and parietic dementia in the negro had not been much discussed and he was hardly in a position to make any statement on the subject, for not a half dozen negro patients visited his clinic in a year. A negro physician here who treated a large number of colored people might be able to throw some light on the subject.

Dr. HORWITZ said that during his service at the Insane Asylum he had not seen a single case of locomotor ataxia or parietic dementia in the negro.

Dr. LIPPE asked if that case of diabetes mellitus gave a syphilitic history, Dr. Bliss replying in the negative. The speaker added that in a recent number of the *New York Medical Record* there was a report of some twenty cases of diabetes mellitus in which a cure had been effected by the administration of mercury and the iodids in conjunction with some electrical treatment of the writer's own.

This shows how far syphilis is blamed for many diseases whose etiology is not understood.

The PRESIDENT said that it was an interesting fact the ocular tissues of the negro were not susceptible to certain disease processes. This was exemplified by the immunity of the negro to granular lids. Again, the negro race was practically free from lachrymal obstruction, this being due to anatomical conditions, the duct being much wider than in the white.

Dr. WOLTERS, in closing said: Dr. Jacobson quotes experiments of Hebra and others. He reports complete vindication for mercury. He says large quantities of mercury were administered by inunction to healthy people. No injurious affects followed. Probably all those healthy people inuncted by Hebra and others had mercurial idiosyncrasy, but the declaration of Dr. Jacobson needs no refutation. What physician has not observed the pernicious action of mercury on the human being—especially if it be a healthy person. It has long been known that the serious symptoms of secondary and tertiary syphilis can be produced by mercury as well as by syphilis. Dr. Jacobson does not understand why the subject of this paper does not include myelitis and other nerve lesions. No explanation is needed. They are not allied in any particular to either tabes or paresis. Why not include astronomy also? The reason that the posterior columns of the cord, the great sensory tracts, are principally involved is probably because they are most vital—more highly specialized. The most vital and delicate tissue must suffer especially. Supposing syphilis is the etiological factor, why should it affect the posterior columns mostly?

In hydrargyris, why are the lower incisor teeth the first and almost the only ones to fall out?

Arguments trying to explain the absence of sclerosis of the brain and cord in the negro as racial immunity does not prove anything and likewise does not explain the comparative absence of these diseases in the lowly white man. He had especially in mind that white individual who has untreated syphilis and who is the victim of every known excess.

In the treatment of syphilis by mercury he would advise its administration with extreme care. Too much harm is done by over treatment. He favored the intermittent form of treatment, administering the drug with caution, when syphilis seems to become active and during the quiescent period administering the medicine in minute doses, or not at all.

To give mercury for years of continuous treatment, stopping it just short of pyalism and at times even salivating the patient is giving a drug not understood and a good thing over-done, and it is in just that class of patients so treated that he had seen tabes in its worst form.

THE BETHESDA PEDIATRIC SOCIETY.

Meeting of October 27, 1905.

Green Stools.

Dr. ZAHORSKY made a temporary report on an inquiry that he has undertaken into the chemical nature and source of Green Stools. Green stools, he said, were commonly known to signify the beginning of an indigestion or of a mild infection. The question that immediately arises, is, why is this?

The old idea was that green stools simply denoted the presence of an hyperacidity. This was denied fifteen years ago by Pfeiffer who claimed that the condition was due to too much alkalinity. He showed that green stools were not very acid, and that the administration of alkalies produced green stools. Later, the French authority, Lesage declared that he had found the cause in a chromogenic bacillus that he discovered in green stools. Huebner, again took up the question on the lines considered by Pfeiffer and decided against the conclusions arrived at by this observer since he found green stools present with an acid intestinal tract. He also tried to disprove the assertions of Lesage and failed to find the chromogenic bacillus. He asserted that the green pigment was derived from bilirubin and was itself, biliverdin. The text books now, say that the cause is not known. Wernstedt, recently undertook a microscopic and chemical examination of these stools, and found that the green pigment was always intimately associated with the mucus of the stool, and that the invariable presence of oxydase served to produce the pigment by the action of this ferment on bilirubin. The green particles were found gathered about the leukocytes and were believed to have been a conversion product, *i.e.*, biliverdin from bilirubin.

Now, is this green pigment biliverdin? No one has proved it. Dr. Zahorsky then recited a number of tests, by means of which he

had attempted to prove or disprove whether the green pigment was or was not biliverdin; The acetic acid test and the alcohol test failed to reveal the presence of this pigment. Secondly, he found that the green, is not always associated with the mucus but is frequently saturated through and through the casein products. Wernstedt's stand, therefore, is surely not right. Thirdly, Gmelin's test on green stools gave very slight reactions indeed, not more intense in fact than with stools of other colors. Again, stools containing blood which always contains oxydase, do not, upon standing give green stools, as they should, were the color to depend on the conversion of bilirubin into biliverdin by this ferment. There are traces of bilirubin in all stools, and the green pigment developing most probably from contact of the stool with some constituent of the atmosphere or with some gas. The point is, that green stools are not due to a lack of resorption of bile from the intestine, but are due rather to a disturbance of the digestion of the proteid substances.

Dr. JOHNSON asked, can it be determined whether the a stool is acid or alkaline, and if so, is a green stool necessarily acid?

Dr. ZAHORSKY, Yes, he gives litmus paper to the nurse in severe cases for this purpose. Pathologic stools are usually acid.

Dr. LIPPE asked about the rôle of of bacteria in these cases.

Dr. ZAHORSKY answered that Lesage had brought out this question but that he did not think much of the value of the findings.

Dr. FISCH said that he was glad that Dr. Zahorsky's work had resulted in conclusions with which he could surely agree, namely that the green pigment is not biliverdin. The pigment develops after the stool has been exposed to the air, and is due most probably to the effect of same atmospheric constituent. It, on the other hand, oxydase is the cause, why does it not act sooner? Oxydase is present in every cell of the body, why, therefore, should it act only on the bilirubin?

Dr. ZAHORSKY spoke of one more test: A French authority had claimed that the pigment was due to the presence of biliprasin, an intermediary urobilin product, he had tested for biliprasin and had not found it.

Dr. HALL asked if it would be possible to treat a case symptomatically by following the course of the acidity or alkalinity of the stools.

Dr. ZAHORSKY answered that this was sometimes possible.

Tendon Transplantation.

Dr. HOFFMANN, described a case of tendon transplantation, in a hemiplegic boy of seventeen, probably of congenital origin. There was a useless arm because the flexors of the hand were paralyzed, the muscles of the arm, however, had retained some activity and strength. The aim, therefore, was to obtain, by means of the arm muscles, use of the fingers. Dr. Hoffmann had never heard of replacing the muscles of the forearm with those of the upper arm. Transplantation of the mass of flexors of the forearm to the tendon of the biceps was impracticable because of the bulk of these muscles, he, therefore, dissected off the attachments of the flexor carpi radialis, flexor carpi ulnaris and palmaris longus, at the wrist and at the elbow, transplanting the lower ends into the tendons of the flexor profundus digitorum and the upper ends into the tendon of the biceps. The three small flexors were then converted into a connecting cord, between the finger muscles and the arm muscles. The operation was performed five weeks ago, so there have been no tests made yet for results.

The PRESIDENT expressed a hope that the Society would hear further about this case.

Dr. ZAHORSKY asked whether the atrophied muscles of the forearm would not stretch under the constant tonus of the healthy biceps, and thereby minimize the results of the operation.

Dr. HOFFMAN thought not. A general discussion followed.

Pyelonephrosis.

Dr. JOHNSON related the histories of two cases that he had recently seen: One, a case of pyelonephrosis in a child of nine months, the baby had been running a variable temperature for a month, it was sometimes normal and again would reach 104° , early there had been chills, there was wasting, the heart and lungs were negative, the abdomen presented a bulging when the child was held up, on left side, this was not noticeable when it was lying down. Inquiry revealed that the tumor had never disappeared and had come gradually. Urinary examination showed pus cells. Dr. Johnson advised operation, but the attending physician resorted to aspiration instead and obtained a large quantity of purulent urine. This was followed by temporary relief and was later repeated. The case was lost sight of, so that the final outcome is not known.

Miliary Tuberculosis.

The other case was one of suspected miliary tuberculosis, in which the symptoms were characteristic of nothing, and offered the greatest confusion. The respirations were from 70 to 80, the spleen a little enlarged, the liver enormous, the abdomen tympanitic and tender, the aspect typhoidal, the temperature irregular, the lungs at first negative but later revealing dullness in the right apex with marked crepitation all over the upper right lobe. There was no leukocytosis, and no plasmodia were present. No Widal reaction. The child had recently been in intimate association with a tubercular father. Autopsy was not obtainable.

Dr. LEVY suggested that the case might well have been an abscess of the liver.

Dr. LIPPE remarked that an examination of the eye-grounds might have clinched the diagnosis.

Syphilitic Spinal Paralysis.

W. Dougherty discusses this syndrome, the distinguishing features of which, as described by Erb, are feebleness in the lower extremities, more or less spasticity and exaggeration of deep reflexes, together with vesical and possibly rectal derangement and slight but quite constant disturbances of sensation. The lesion is not the expression of any definite pathological process, but Erb states that the main factor is the combined system disease by the side of which the transverse lesion appears as etiologically a quite permissible complication. According to the author, the time that has elapsed between the primary infection and the onset of symptoms indicating medullary involvement must be taken into consideration, and those cases developing within a few years after the luetic infection, even though slow in onset may be looked upon as an expression of secondary or tertiary syphilis, whereas, if a considerable period of time has elapsed before the beginning of the symptoms referable to the cord the changes must be due to what he calls the terminal syphilitic stage. He describes the histories and pathological finding in two cases of the former class, which lead him to conclude that it is the distribution and dissemination of the vascular lesion rather than any special difference in their nature which determines which type of spinal syphilis shall ensue, and that the so-called Erb's syphilitic spinal paralysis is not, as Erb is inclined to believe, necessarily dependent upon a system disease of the spinal cord.

Med. Rec.

REPORTS ON PROGRESS.

MEDICINE.

In Charge of EDMUND A. BABLER, M.D.

Ateleiosis and Progeria.

These are the names that have been given to the two opposite forms of disorders of development. In ateleiosis the development of the body is delayed or arrested; in progeria it is accelerated. In both the interference with the normal course of development is so extreme and so abrupt as to characterize disease and not a mere variation within the limits of health. Both show characteristic physiognomies.

Hastings Gilford (*British Medical Journal*, October 8, 1905), has called attention to this important subject. He considers two varieties of ateleiosis. In the one, which may be termed the asexual variety, there is conspicuous delay of development of the whole body, some organs or parts being affected more than others, the sexual organs being most backward of all. In the second, or sexual variety there is in early life a similar delay of development of the body as a whole until puberty is reached. The sexual organs then ripen, fusion of the epiphyses takes place; and the individual affected becomes set or stereotyped into a being who is in some respects a child and in others a miniature man or woman. An adult of the asexual type retains the coarser features of a time of life near that at which the disease began; while an adult of the sexual variety combines with the stature, proportions, and physiognomy of childhood all other indications of maturity. Gilford feels that these are apparently two varieties of the same disease, but possibly their differences are so great that some may regard them as specific diseases.

Asexual ateleiosis is a form of infantilism, but, unlike ordinary infantilism, it does not seem to have any connection with cretinism, syphilis, congenital heart disease, pancreatic insufficiency or any other of the known causes of delayed development. It seems to be more

of a delay than an arrest of development since those affected may continue to grow and develop for many years after these processes usually cease. It resembles cretinism in the time of the appearance, for though it may begin at any period of development, it favors that of infancy. It is best divided into three forms according as it begins: 1, before birth; 2, in infancy and early childhood, or 3, in the later stages of development. It may not show itself until the normal stature of the individual has been attained, hence, its subjects are not necessarily dwarfs.

In the case reported by Gilford there was a general delay of development. The generative organs at the age of 12 years appeared like those of an infant at birth; his physiognomy and configuration of the head resembled that of a child during its second or third year, and the size and appearance of his bones were those of a boy of 3 years.

In cases of sexual ateleiosis—if it be really a variety of ateleiosis—differs from the asexual form in the following particulars:

1. It is more often hereditary. Asexual ateleiosis can not, of course, be passed on from parent to offspring by direct descent, and no instances are known in which it is seen among brothers and sisters, whereas, in a large proportion of the sexual variety one or the other of these forms of hereditary occurs.

2. The sexual organs apparently mature at the usual age, and their maturation is accompanied with some of the more remote indications of puberty—namely, the appearance of sexual hair, and in women the increased development of the pelvis and of the breasts.

3. In men the muscular system develops to a greater extent than it does in asexual ateleiosis.

4. The skeleton.

Perhaps the best specimens of this type are represented by "Tom Thumb" and his wife.

The sexual form of ateleiosis approaches so nearly the normal that inasmuch as it is sometimes transmitted from father to son, there seems a possible danger of the proportion of dwarf families and the perpetuation of these human beings. There seems to be, however, a tendency of these dwarfs to become sterile early. The propagation of sexual ateleiosis may terminate in asexual ateleiosis. Gilford presents three cases of sexual ateleiosis.

Progeria.—In progeria we have a disease, which is, in some re-

spects, the exact opposite to the foregoing, and in other respects is allied with it. Only two well marked instances have been reported. The main features of this disease may be divided into three categories, according as they show premature old age, delayed development, or some approach to the normal development.

Accelerated development, or senilism, was indicated by the facial and general appearance, attitude, loss of hair, muscular and fatty emaciation, as well as in the mode of death. Autopsy showed extensive atheromatous degeneration of the heart and aorta; senile degeneration of the renal vessels and suprarenal capsule; atrophied intestines.

Delayed development, or infantilism, was shown by the stature and proportion of the body which were those of late childhood; by the backward development of the membranes and formed bones, by the extremities.

A near approach to the normal was indicated by the size of the liver, the relative size of the cartilage formed bones, and by the condition of the brain and sexual organs.

In two recorded cases, the most striking features were the premature degeneration.

Pneumonia.

Hay (*Lancet*, London, June 11, 1905) reports 200 cases in which careful observations were made. He found that alcoholic excess was one of the most important of the etiological factors. 43.5 per cent of 150 cases had taken alcohol to excess. Lunar caustic was used to mark the outline of deep cardiac dullness, thus making it possible to readily detect any alteration in the extent of the cardiac dullness due to the disease.

The writer feels confident that simple valvular disease, quiescent and amply compensated, where you have a good area of cardiac response from a healthy myocardium, will only in a small degree, increase the gravity of the prognosis; whereas nothing could be more serious than pneumonia where the cardiac muscle is flabby and degenerated, even though the valves are normal. He does not believe that mitral disease is, in itself, of great moment. It is true that it lessens a patient's chances of recovery and delays resolution, but that is all. Pericarditis was found to be a most serious complication. It may be

a symptom of the severity of the disease, while at times it is simply a terminal event.

Pallor of the face, empty capillaries, and low delerium indicate cardiac exhaustion. An increase of the cardiac dullness, especially to the right, points to cardiac failure. Alteration in the pulmonic second sound was found to be the first indication of cardiac failure.

Relative to the pulse, one may say that if the pulse, in the early days of the attack, has a frequency of about 120 per minute, is small, soft, and compressible, or is irregular, then the outlook is extremely grave.

Hay found that alcohol produces a vasomotor paresis and causes dilatation of the vessels, and therefore, he maintains that it must aggravate or induce tendencies to vascular engorgement. Alcohol seems to increase the mortality rate. Relative to the application of ice-bags to the abdomen, as advocated by Barr, the writer confirms the former's assertions.

The ice-bag was used in 20 cases, and found to steady the temperature, and improve the tension and volume of the pulse. It increases the depth of the respirations and thus greatly assists the heart by increasing the force of the respiratory pump.

The value of digitalis in pneumonia is enhanced by the ice bag, by tending to bring the circulation into equilibrium.

Glycogen Reaction in Blood.

Gulland (*Brit. Med. Jour.*, April 16, 1905) has studied this reaction in Great Britain. The solution which serves for fixing the stain and mounting is composed of iodine, 1 gram; iodide of potash, 3 grams; distilled water, cc. 100, with enough gum acacia or gum Arabic to make the fluid syrupy. Keep the bottle tightly corked to prevent evaporation of iodine. Place a rather large drop of thin solution upon a clean slide and the ordinary air-dried blood films on a cover-glass, lowered on to it and allowed to remain undisturbed for half a minute for complete staining, and then displace toward one end of the slide in order that the thick layer of fluid may not cut off too much light in the examination. The surplus fluid may be removed with a filter paper. The specimen is now ready for examination, which latter requires good light and an oil-emersion lens. When a film of normal blood is thus treated the red corpuscles stain yellow or white on a faintly yellow back-ground and the white corpuscles of a much finer,

lemon-yellow tint. Lymphocytes can hardly be distinguished except by the slight difference in the refractive index of their nuclei. Eosinophiles are readily recognized by the high refractive index of their granules, the polymorphonuclear neutrophiles always look darker than the others. In none of these should there be the least trace of red or brown. The findings above described represent the negative reaction. In the positive reaction the changes occur in the polymorphs alone and the cells affected give a brown or reddish brown color of glycogen in three ways: 1, as a diffuse color; 2, as a fine granulation, and 3, as coarser scattered granules or masses. It is worthy of mention that the nuclei are never affected. The number of cells affected in the positive reaction varies from 2 or 3 per cent to almost all. If, after five minutes searching or the passing of 100 polymorphs in review no positive cell is seen, the reaction may be regarded as negative.

A positive reaction is constant in bronchial pneumonia, croupous pneumonia, septicemia, empyema, gangrene or abscess of the lung, pyemia, all septic gangrenes, all advancing suppurative processes, peritonitis, appendicitis, etc.

A negative reaction may be anticipated in rheumatic fever, pertussis, pleurisy, asthma, chronic arthritis, chorea, rickets, infantile atrophy, catarrhal jaundice, tuberculosis, bronchitis, etc.

The writer thinks the method capable of aiding in distinguishing between cerebral abscess and cerebral tumor, cerebrospinal meningitis and tubercular meningitis, rheumatism from gonorrheal arthritis, obstruction from strangulated hernia, etc. He believes that the tests should be more extensively used than at present.

Mucomembranous Colitis.

Symptomatically, as viewed by DeLangenhagen, (*Lancet*, April 30, 1905) this condition is characterized by marked intestinal atony, more or less abundant secretion of mucoid or membranous material and the presence of pain. The writer considers these as the three fundamental elements of the disease. Treatment consists, first, in alimentary régime. Abundant, and all irritating food are prohibited.

Green vegetables, alcoholic drinks, raw fruits, all fatty material and pasteries must be excluded from the diet. Milk is generally well taken and forms the basis. Eggs, porridges, and a very little finely minced raw meat may be given. In severe cases bread must be strictly for-

bidden. In these severe cases, milk constitutes the principal nourishment.

The second element in the treatment is the washing out of the colon. The pressure from the fountain-syringe must be light and the flow slow, so that about ten minutes for a quart injection is required. To make the water less irritating it is recommended that linseed oil, marshmallow, or some medicated substance be added.

A low temperature, 35°C., is best when there is tendency to spasm and resistance, and a higher one, 48°C., when complete atony without spasm is present. The writer advises that part of the injection be used to cleanse the colon from feces, and the remaining portion of the injection to carry away the mucus and act upon the mucous membrane previously cleansed. He advises that the second part of the injection be retained nine to ten minutes.

Irrigations are repeated daily except in certain cases where he performs it two or three times a week.

The third element in the treatment is hydromineral cure. The springs of France are spoken of, and methods of treatment described.

SURGERY.

In Charge of M. G. GORIN, M.D.

Durante's Radical Treatment of Varicocele.

Mondini (*Med. Review of Reviews*) reports successful results by the use of this method and claims its superiority over other radical method in producing an ideal result. The three well known methods of radical cure of varicocele are: 1, Celso's extirpation; 2, Ricord's subcutaneous ligature; 3, Kocher's excision. The latter method being the one most generally used in this country and in Germany. The author, while not denying the excellent results obtained by this method, maintains that post operative atrophy of the testicle is not avoided, which Prof. Durante, of Rome, claims is eliminated by the use of his method. It is as follows: The operator after the usual preparations locates the external inguinal ring upon the diseased side, from which point an incision is made downward in the skin of the scrotum. The spermatic cord is separated from the surrounding tissues and freed from the pampiniform plexus. After clearing the venous plexus its relation to the vas and the spermatic artery is examined, then a curved needle

armed with No. 6 catgut is passed through the tissues of the plexus at the lower extremity of the wound and under two or three small varicose veins and the ligature tied. The same suture is passed around most of the dilated vessels, gradually extending to the upper margin of the wound, and when the external ring is approached the catgut is tied to the first ligature, so that the tied vessels will remain strangled and the testicle will remain suspended immediately beneath the external ring. Care must be taken not to tie all the veins of the plexus but only those most diseased. This precaution prevents interception of the venous circulation of the testicle—a cause of atrophy. In this method the pampiniform plexus is neither cut nor interfered with in any way by cautery or instrument. The margins of the wound are brought together and healing occurs by first intention. The author is of the opinion that Durante's radical method is of as much value for varicocele as Bassini's operation is for hernia.

Operation for Malignant Neoplasm of the Urinary Bladder.

Berg (*An. of Surg.*) suggests the following operation for the relief of cystic neoplasms, with a view to thoroughly removing the affected lymphatics. He claims it is especially adapted to new growths involving the posterior wall and *bas-fond*.

The ureters are both catheterized before anesthesia is commenced. The abdomen and genitals are thoroughly shaved and cleansed the day before the operation. A three-inch incision is made from the pubis upward in the median line and the patient put at once into the Trendelenburg position, and the abdominal viscera pushed upward and protected by a warm gauze pad. The small pelvis is thus well exposed. The peritoneum of the pelvic floor is now divided straight across, in the female at the vesicouterine reflection, and in the male at the anterior aspect of Douglas' cul-de-sac. The peritoneum is now bluntly raised from the pelvic floor to the bifurcation of the common iliac artery, when the ureter with its contained catheter can readily be identified. The glands along the internal iliac and those in the loose cellular tissue are now carefully dissected out on either side down to the bladder wall. Should the ureter be involved in the cancerous growth it should be dissected out with the involved glands and resected and implantation into the bladder subsequently performed. The pelvic floor is now loosely packed with gauze and the peritoneal packs arranged to prevent soiling the peritoneum.

The bladder is now opened in healthy tissue and the surface of the neoplasm cauterized with pure carbolic acid, after the bladder has been thoroughly dried with sponges. The neoplasm is now widely excised, and the proximal end of the divided ureter (if that structure has been involved) implanted in the healthy bladder wall. The bladder wall is repaired by catgut for mucosa, and mattress silk for the muscularis. The wound is drained by gauze, in the female, through the vagina; in the male, through a counter opening in the peritoneum. The pelvic peritoneum is completely closed over the gauze drainage; the abdominal wound closed without drainage.

The advantages of this operation are that it affords freest access to carcinoma of the posterior wall and base of the bladder. It is the only method by which indurated glands along the course of the internal iliac can be removed. Removal of a diseased ureter and implantation can be most easily done. It allows accuracy of suture in the bladder wall. Excellent drainage is afforded below.

Chronic Incarceration of the Stomach in a Congenital Diaphragmatic Hernia.

Prof Heidenhaim (*Deutsche Zeit. f. Chir.; St. Paul Med. Journal*). The patient, a boy, aged 9 years, had had bronchopneumonia twice, and a year previous to the present condition had bronchopneumonia with empyema. A month later resection of the 7th left rib and a quart of pus removed, in which were large shredded pieces resembling pieces of omentum coming from the median line near the diaphragm. Recovery was good except for, pain in the left shoulder, and the child gained in weight and strength and attended school, but four months after he began vomiting at intervals, and finally every day toward evening, when the pain in the left shoulder would become very severe. The patient is emaciated pulse slow and irregular. Precordial tympany, instead of dullness on percussion. Clear vesicular breathing on auscultation. Stomach lavage relieved the pain but not the vomiting. The patient complained of great thirst. X ray examinations were made: 1, of the empty stomach; 2, filled with two liters of fluid; 3, with a stomach-sound inserted; 4, after taking an emulsion of bismuth. Diagnosis: Stenosis of pylorus caused by kinking of pylorus, due to hernia in the diaphragm. Three months later operation was performed. On opening the abdomen in the middle line the transverse colon was found under the diaphragm;

it was pulled down and then it could be seen that the stomach had disappeared in a cleft of the diaphragm, just in front of the spinal column, only a part of the pyloric end presenting. The stomach was readily drawn out of the mediastinum after separating several adhesions when the following conditions were noted: There was only a gastrocolic ligament of the right side, and on the left side of the transverse colon was no omentum, and only poorly developed on the right side. The omentum seemed to have developed on the stomach, beginning at middle and extending to the left and adherent at the margins of the cleft. A semivolvulus had taken place on account of the rotation that evidently must have occurred when the stomach entered the cleft, the greater curvature going in first. The stomach was sutured to the transverse colon, and then after thorough examination of the cleft in the diaphragm it was approximated and sutured without tension. The cleft was anterior to the cardia, extending from behind and over the liver, the width of two fingers to the right of the cardia, and extending then the left post-axillary line. The patient made a rapid recovery and at the end of three weeks was sent home well.

This is, we believe, the first case on record of a cure of congenital hernia of the diaphragm.

The Twine Triangular Stitch for Gastro- and Entero-Enterostomy.

Maury (*Am. of Surg.*) advocates the use of the twine triangular ligament as a substitute for the elastic ligature of McGraw, or the Murphy button for use in gastroenterostomy, basing his opinion on results in experiments on several animals, and also on its use by such operators as Willy Meyer, Lilienthal, Bodine and Abbey. He argues that if a piece of twine 8 to 10 centimeters in length will do equally good work it is to be preferred to any form of metallic button. Intestinal obstruction and death have been caused simply by the weight of the Murphy button. Aside from the fact that the Murphy button, Harrington bobbin and other like contrivances are likely to slough into the peritoneal cavity, or not to loosen from their attachment, or even fall into the stomach, there is one objection common to both these and the McGraw ligature. Success of the operation depends greatly upon the intrinsic character of the instruments and by no means on the skill of the surgeon. He is in a great measure dependent upon the instrument maker or the dealer in india rubber. In other words,

the twine triangular ligament depends for its success entirely upon the skill of the man putting it in, and not upon the problematical strength of an elastic band or upon the variable temper of a spring. Furthermore the piece of twine may be had anywhere, whereas the elastic ligature must be procured from a special maker, and must be without flaw, and above all things it must be new.

In using the triangular stitch, after selecting the portion of the small gut which is to be united to the stomach, a point 90° from the mesentery is chosen for the line of insertion of a posterior row of Lembert stitches, so that when the triangular suture is finished, and the anterior row of Lembert sutures is closed over it about 180° of circumference will have been used in making the stoma, leaving the remaining 180° to constitute a lumen for the passage of food, pending the sloughing out of the stitch. The stitch consists of two isosceles triangles superimposed, the apex of one being in the stomach and its base lying beyond the Lembert line in the intestine; the apex of the other is in the intestine and its base in the stomach beyond the line of connecting Lemberts. The length of the perpendicular of the intestinal triangle should be a little less than the diameter of the gut. A point of importance is to ascertain that the ligature has pierced the mucous membrane of the viscera at each insertion. Another point of great importance is in making sure that the ligature is drawn together with sufficient force and tied tightly enough, otherwise sloughing will not take place.

As to the character of material used for the triangular ligature it is essential that very strong twine be used so that there can be no chance of its breaking in the operator's hands. It is preferable to use twisted instead of braided twine.

Fractures.

A fracture produced by only slight violence should at once raise the suspicion of a malignant growth. In such a case a uniform dark shadow about the bone as seen in the fluoroscope is to be interpreted as a neoplasm rather than a calculus, for recent calculus is not opaque to the x-rays.—*Am. Jour. of Surg.*

BOOK REVIEWS.

The Courier of Medicine Company will mail, postpaid, any book reviewed, on receipt of price.

Park's Pathogenic Micro-Organisms.

A Manual of Pathogenic Micro-Organisms, including Bacteria and Protozoa. For Students and Practitioners of Medicine and Surgery, and Health Officers. By William Hallock Park, M.D., professor of bacteriology and hygiene in the University and Bellevue Hospital Medical College, and director of the Research Laboratory of the Department of Health, New York. New (2d) edition, enlarged and thoroughly revised. In one octavo volume of 556 pages, with 165 engravings and 4 full plates in black and colors. Cloth, \$3.75. net. Lea Bros. & Co., Philadelphia and New York.

The importance of the protozoa in the pathogenesis of diseases has lately received adequate attention, and the wonderful discoveries in this field have added very greatly to the science that treats of pathogenic micro organisms. When we consider that the number of diseases caused by protozoa is constantly increasing, it is correct, therefore, to speak of the work as Pathogenic Bacteria and Protozoa, to displace the title of the first edition—Bacteriology.

In fact, even from the name specific infectious diseases the diseases caused by protozoa must be dropped and placed in a separate class, and the physician must give some attention to amebina, mycetozoa, flagellata and sporozoa. Coccidia, trypanosoma, piroplasma, microsporidia, cnidosporidia, etc., in addition to pneumococci or streptococci.

Now we learn that spirocheta are really not bacteria but protozoa, and other surprises are in store for us. The spirocheta pallida is found described. The value of the sections on bacteriology can not be questioned. Dr. Park knows how to pick out the important points of a subject. The revision certainly brings out everything new in an admirable manner.

Lectures on Autointoxication in Disease.

Or Self-Poisoning of the Individual. By Ch. Bouchard, professor of pathology and therapeutics; member of the Academy of Medicine and physician to the Hospitals, Paris. Translated, with preface and new chapters added, by Thomas Oliver, M.A., M.D., F.R.C.P., professor of physiology, University of Durham; physician to the Royal Infirmary, New Castle-Upon-Tyne; formerly examiner in medicine, Royal College of Physicians, London. Second revised edition. Crown octavo, 342 pages, Extra cloth, \$2.00. net. F. A. Davis Company, 1914 Cherry street, Philadelphia.

When Bouchard's work first appeared—about twelve years ago, it marked an epoch in the study of pathological physiology, but this author has not revised the original work and in many features it is clearly behind modern progressive research. Dr. Oliver in translating the work has made additions in an attempt to bring the book up-to-date. Nevertheless, some of the original conclusions of Bouchard are clearly wrong and there seems to be no reason why they should be again taught in a second edition. As an example, his antiseptic treatment of typhoid fever, or the toxicity of the urine has not been generally confirmed.

The work has a great value still in that it gives the practitioner much food for thought in the treatment of his cases. The book reads like a novel.

Dr. Oliver's additions increase the value of a work which still merits the study of old and young physicians.

Postoperative Treatment.

An Epitome of the General Management of Postoperative Care and Treatment of Surgical Cases as Practiced by Prominent American and English Surgeons. Together with Suggestions Concerning the Technic of Certain Operations with a View to Securing Better Postoperative Results By Nathan Clark Morse, M.D., surgeon-in-chief to the Emergency Hospital, Eldora, Iowa. Containing 5 plates and 155 other illustrations. Price, \$4 00, net. P. Blakiston's Son & Co., Philadelphia.

This neat volume, consisting of 468 pages, divided into twenty-one interesting chapters, contains an epitome of the general management of postoperative care and treatment as practiced by a few of our best men both abroad and at home. It also contains many important points of decided value to the young surgeon. The remarks are flavored with the essence of the author's experience, hence are of special value. The young graduate and the general practitioner who has drifted into surgery will find the book of far more value than the experienced surgeon, or the young surgeon who has properly equipped himself by spending several years in a busy hospital and several more assisting some competent and conscientious surgeon possessing an extensive practice. The general practitioner who does an occasional operation will find the volume of very decided benefit. It is true that we do not fully coincide with all that the author has said, but that is to be expected. We believe that, as a postoperative sedative, aspirin will be found superior to morphin. We are surprised to find that no mention of Von Mosetig's iodoform bone plugging material in the treatment of tuberculous joints. No mention is made of Maxwell's treatment of fracture of the femur. The chapter on amputations and that on artificial limbs are timely and good.

The publishers deserve credit for the clearness of the print, the good quality of the paper and the presentable appearance of the book. The illustrations are good, and all-in-all we find the volume a very commendable one.

The Courier of Medicine Company will mail, postpaid, any book reviewed, on receipt of price.

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ORIGINAL CONTRIBUTIONS.

Tuberculosis in St. Louis.

By GEORGE RICHTER, M.D.,

ST. LOUIS, MO.

THE paper by Dr. Wm. Porter in the January issue of the ST. LOUIS COURIER OF MEDICINE, reads like a sermon and should be studied by every intelligent practitioner. What strikes me as highly proper in his deductions, is the remark, that the local physicians have a duty to use the newspaper columns for the spread of hygienic knowledge. The danger of abuse in this direction is easily avoided by *not* having the name of the author attached. I have followed this policy for very many years, only in such journals have I had my name given, where no suspicion of a personal advertising could be entertained, as in newspapers of New York, or in Germany. Practically nobody in St. Louis knows that I have been a frequent contributor to the lay-press about medical affairs for many years.

Lately I have had occasion to write several articles about the spread of tuberculosis for newspapers—mostly in German. An abstract of the contents may interest a few readers. I shall give them as Theses:

“Hygiene is the doctrine of cleanliness.”

"A chemically clean hand may be infected by bacteria."

"A surgically clean hand may be chemically unclean, when the surface contains antiseptic chemicals."

The "normally" clean hand of the physician is not healthy because it may be free from all micro-organisms. Some of the latter counteract or "neutralize" pathogenic bacteria.

As we have no means to clearly distinguish pathogenic from "useful" bacteria, we must endeavor to destroy them all. It is analogous to the sterilizing of milk, by which we also destroy useful ferments.

The fight against pathogenic germs must be done in the first place by educating people to a clear understanding of the established facts. Where this can not be done, for instance in cases of urgency, like in epidemics, there the government must enforce such rules, as are in harmony with our present knowledge, avoiding, however, unreasonable torture and scare.

The sources of infection with acute diseases are better known than those of more chronic character, like tuberculosis; the time lapsing between infection and diagnosis often being so long, that the original source can not be traced any more.

We must persistently hunt for all possible or probable breeding places of germs and render them harmless.

Public life in large cities, like St. Louis, furnishes endless material for thought in this line. Most flagrant violations of the ordinary rules of cleanliness are evident, yet ignored. No attempts at remedying the conditions are made.

Slop-wagons, laden with monster-cultures of infectious material, carelessly covered, spilling their cultures over the streets, traverse the city from one end to the other. (These wagons should be closed tight and contain enough of the highly effective lime-water, to at once disinfect the contents).

Most of the sprinkling-carts throw the water in a wide circle, each drop raises a small cloud of dust. Where sprinkling is done very thoroughly, the now following sweeping machine simply kneads a dough of mud, which remains where it had been. Where sprinkling is done more lightly, the sweeper raises dense masses of moistened dirt, throwing much of it on the side-walk, where it is allowed to remain. (The sprinkling-carts should be filled with water containing sulphate of zinc,

1/1000000, which according to recent research would accomplish a great deal toward disinfection of the streets. Repetition of the process will add to the effect. The substance is not volatile, therefore, here harmless. The overflow will disinfect the sewers. The sweeping-machine should be constructed similar to the carpet-sweeper, taking up the dirt in its body, filled with milk of lime. The whole would form a semisolid mass which might possibly be used for street-repairs).

A great nuisance is the side-walk at present; rarely swept, and then usually without moistening the surface (Side-walks should be cleaned regularly together with the open streets and after the same method).

The "anti-spitting ordinance" is a very unsatisfactory ruling. Now the consumptives spit on the street, where the sputum is permitted to become dust. All spitting must be prohibited. (Large containers like those of our Union Station should be distributed in each block, on every corner, and contain some lime-water).

The dusting of carpets and clothing in public places is apt to spread disease. (There is an apparatus which removes dust by suction and simultaneously burns it. It should be provided by the government).

The customary hand-shaking at every introduction, the indiscriminate kissing of other people's children, as demanded by the loving mothers, are undoubtedly other sources of spreading diseases.

Coin and paper money have long been known to carry germs. (Tablets of paraformaldehyd should be used freely in money drawers and pocket books).

Our street-cars are in a lamentable condition as far as their cleanliness is concerned. (A thorough daily washing of them must be obligatory).

It has been demonstrated how readily tubercle and other bacilli may be acquired by the common use of the chalice in Holy Communion. How much greater the danger in public schools, where the little ones use the same drinking vessels of metal promiscuously! (Each child must have his own drinking glass).

Teachers see that each child comes to school with clean hands and face. But that does not suffice. At home and on the way to school they may have gathered infectious matter. (On arrival at school, during recess and before leav-

ing school they should be ordered to again wash their hands and faces).

Frequently children exchange their lunch as brought from home. This is certainly inadvisable. (Lunch should be furnished by the school as has been done in many places, for other reasons, however).

The experience with the chalice points also to conditions prevailing in hotels, restaurants and saloons. It is customary there to wash all dishes, also spoons, knives and forks, glasses and cups in a common vessel with warm water, rinse them in another vessel with somewhat purer water, then dry them all with the same cloth, until they have the appearance of being polished. They all had come more or less in contact with saliva of a variety of guests, of whom one may be reasonably sure that a certain percentage was carrying disease-germs. The dish-water must certainly be full of all kinds of microbes. Who would think for a moment, that this "cleaning" was a proper procedure? (All such articles must be sterilized by boiling).

In a sanitary respect the most vicious places are the ordinary saloons, where the "common" people, the majority, frequent. Here the glasses are rinsed in a common tank, then dried and "polished" and finally put on a shelf. On these the dust gathers, on them the universal flies rest and make their deposits. (All glasses must be rinsed in running water and every time before filling a fresh glass it should again be rinsed in running water).

In many saloons the floor is covered with white sand, in places with saw-dust. Much "organic" matter is allowed to drop from the lunch counter. In spite of occasionally present cuspidores expectoration is thrown on the floor—just because of the sand. Every time the door is opened, much fine dust rises from the floor—invisibly. In summer time the now indispensable electric fans help to raise the pulverized virus. These fans throw the hot air from the upper region of the room downward. The draught causes evaporation of the sweat and cools for a while. At the same time volumes of the finest dust are thrown upon the "drinks." Most of the spittoons are shaped so that a slanting brim will catch the expectoration, allowing it to remain there as a pasture for the flies. The latter swarm about the place, feed on the same free lunch, then rest upon the glasses, etc. (Floors must be kept free from all

sources of dust. They must be scoured every day with soft soap, or lye. Only suction fans can be permitted, which throw out the hot air and the dust. Spittoons must have a cylindrical shape and contain either lime-water or a soap-solution. All expectorating on the floor punishable. All eatables to be protected from flies and dust, better conceded only where served individually by employes. Ample ventilation with guard against all flies and mosquitos must be secured. Saloons and restaurants need a regular supervision by the health authorities).

Disinfection of the "toilets" is usually well attended to by the proprietors, though frequently in a futile way, after the idea, that a disinfectant must have a nasty odor, like chlorid of lime or crude carbohic acid. (Formaldehyd and soap-solutions are better).

The towels in toilets are very objectionable, usually they are soon badly soiled. (Instead of these it ought to be feasible to have paper towels similar to the toilet paper, or like the table napkins of paper, to be thrown away after one use).

Hucksters with their wagon-loads of vegetables and fruits expose their goods to the street-dust most carelessly. House-wives will readily understand of what this dust consists. The "felons" more prevalent among servants originate from carelessness in handling such stuff. (Vegetables should be washed thoroughly before preparing food. They are then usually well sterilized by boiling. Lettuce, etc., must be cleaned even more carefully on account of possible presence of eggs of intestinal parasites. Fruit must be washed in sterilized—boiledwater and, if possible, peeled before eating).

In bakeries and confectioneries the festive fly is omnipresent. There is only scant guard against dust. (All these goods must be kept in the tightest possible enclosure, as no cleaning or disinfecting of them is possible).

It is even worse with the average grocery. The goods there are often adulterated with sweepings from the warehouses. In the store they are frequently exposed to all kinds of dust, particularly in such places which are connected with a bar room. (The connection of grocery with bar-room should be absolutely prohibited, for many reasons).

The same rules should apply to butcher-shops, which usually also deal in vegetables. Venders of candies and fruits

on the streets need supervision. Dancing halls have ruined many lungs. (It would be unreasonable to suppress them, but it is the duty of the authorities to have them clean).

We must be very careful not to scare people into a terror of bacilli. It would result in a passing fad. But we must educate the children toward an instinct of cleanliness, which observes not only their own body, but all the surroundings. Such cleanliness aims at a civic virtue superior to artificial patriotism, for it means love of the neighbor, of mankind. One of the greatest vices is indifference to the weal of our fellow-beings. Hygiene is, therefore, one of the noblest specialties. It should not be a specialty; it should be the universal instinct.

We must all be thankful to Dr. Porter for having once more addressed us in such an important cause.

Yet, I take exception to one of his arguments; the great loss in values to the community by tuberculosis. It appeals well to the statistician and politician. It does not appeal so much to the physician. With us that happiness which is due to the health of our people can not be defined by monetary valuation. And still! "Authorities" listen only to such arguments—if at all!

[407 North Broadway]

Darier's Disease.

By H. W. MOOK, M.D.,

ST. LOUIS, MO.

I BROUGHT this patient here to show the effect of the x-ray treatment on the disease. In all, some thirty-five or forty cases have been reported. No treatment has ever influenced the course of the disease in the least. About three months ago I got this patient from the City Hospital and took him to the Skin and Cancer Hospital and put him under x-ray treatment. Improvement being so marked, I brought him down to show him to you. It is a very rare affection and a histological examination shows that the lesion lies entirely in the epidermic layer of the skin. His face three months ago

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was covered with these cornifications. Dr. Grindon reported this case about two or three years ago. The immediate effect of the x ray was to dry up the secretions from the fungoid growths in the genitocrural region. In a few weeks the growths were markedly reduced in size and have continued to reduce until now they are about one fifth as large as when the treatment was begun. Formerly curretting was necessary for their reduction with a rapid recurrence. The x-ray treatment has entirely relieved the pain and burning sensation which are constant features at this stage, if the x-ray treatment is not given regularly.

Splenectomy for Rupture of the Spleen.

By DR. FREUND,

ST. LOUIS, MO.

THIS patient walked into the City Hospital on the 12th of last month; a laborer, single, aged 23 years. There was a diagnosis of internal injuries. There were symptoms of shock, but the patient's mind was clear and the tongue clean. Examination of lungs negative, temperature 100°, pulse 96, respirations 24. Flatness in the lower half of the abdomen, no vomiting, mucous membranes pale. Internal hemorrhage was suspected; he was sent to the operating room and given ether. The abdomen was found to contain a large amount of dark colored blood. Incision was made across the rectus. Rupture of the spleen was found. The organ was removed and the abdomen closed as soon as possible, with a glass drain in position. A hypodermoclysis was given, tube drained every three hours. At no time was the temperature above 101° except on the second day when it went to 104°, respirations rising as high as 40. He continued to improve. He had trouble with a cough and dullness in the apex of the left lung, but no tubercle bacilli were found. Blood examination showed that the leukocytes averaged 18,000. When he entered the Hospital the leukocyte count was 9,000. The patient has lost about 32

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pounds in weight. Today there was found about 42 per cent of hemoglobin, though up to this time he has averaged 35 to 38 per cent.

Presentation of the Spleen.

By W. C. G. KIRCHNER, M.D.,

ST. LOUIS, MO.

I saw Dr. Doyle remove this spleen. The patient came in with a history of injury to the left side. There was pronounced shock and the condition was such that operation seemed advisable, not that he was pronouncedly collapsed, but experience has taught us that in all of these cases the safest procedure is exploration, not only when there is contusion of the abdomen but where hemorrhage is suspected. Dr. Doyle made a median incision. There was a good deal of hemorrhage. The spleen was at once sought. It was large and soft so that we thought the patient was suffering from some disease. This is one of a series of these cases that we have had. The chief lesson to be drawn from these cases is that exploratory laparotomy is always indicated. In one case of gunshot wound of the spleen there was extreme hemorrhage. The spleen was removed but there was a fatal result, hemorrhage and shock were too great. Another case on which I operated the patient had been struck on the left side with a wagon tongue. There was great shock and it was thought operation would result fatally. He was put to bed and carefully watched. Dullness was made out on the left side. We thought it a rupture of the spleen. He continued to improve for several days, then one morning was found in collapse. He was placed on the operating table at once and the abdomen found filled with blood. The spleen had a thickened capsule into which the hand could be placed. Hemorrhage was so terrific that the patient died a few hours after operation. Dr. Doyle had another case which did favorably until about ten days after the operation, when he died of an infarction of the lung. Dr. Brown has since operated on two cases in which the spleen was removed, and in one there was complete recovery. The other came to us rather late and the result was fatal. Of some five or six cases we have had three or four recoveries. If we want any results in these cases they should come to operation

early. Our attention was led to the spleen in this case of Dr. Doyle's because there was pain in that locality, shock and hemorrhage. The patient was injured by falling between two freight cars. He fell from the door and hurt the left side.

Tumor of the Face.

By H. W. MOOK, M.D.,

ST. LOUIS, MO.

THE patient, aged 70 years, was admitted to the City Hospital on the 23d of last month. Had used alcohol moderately and formerly smoked. No history of tuberculosis, carcinoma or anything of the kind. Had regular habits of sleep, father and mother healthy. He has suffered with asthma for three years. No venereal disease. Four years ago the patient first noticed a small grayish spot on the tip of his nose. It increased to the size of an orange. The pedicle of the growth is small. Every night he has severe attacks of asthma. Appetite is poor, digestion fair, bowels costive, breath offensive. No tumor or mass palpated in abdomen. Respiration not increased, fremitus on both sides the same. Pulse regular, small and weak. Heart sounds can hardly be made out. No cardiac murmurs heard. Urinalysis; specific gravity 1003, acid, cloudy, albumin negative, sugar negative, no casts.

I saw this case about a week ago. Besides this large tumor there were a number of smaller ones. Usually in these molluscum fibromata the lesions occur all over the body. They are according to Recklinghausen supposed to grow from the nerve sheath. They are occasionally very painful and sometimes resection of the nerve is necessary to give relief. Rhinophyma is an increase in the size of the sebaceous glands and is an advanced stage of acne rosacea, and that is what I thought this was at first, on account of its soft lobulated appearance and location. When these tumors upon the body become very large they hang down like a large sac. These tumors frequently recur. Cases have been reported with two

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or three thousand tumors on the body. They sometimes weigh ten or fifteen pounds. The patient has had this condition for five years and says that before that time the nose was red.

According to Crocker, Neumann and others, the molluscum fibromata tumors consist of a hyperplasia of the connective tissue of unknown origin.

Stab Wound of the Abdomen.

By DR. FREUND,

ST. LOUIS, MO.

THIS patient entered the City Hospital with a stab three inches long above the symphysis. Practically all the small intestines were hanging out of the abdomen. He is a man aged 20 years, works eight hours a day. He entered the Hospital conscious. Pulse was small and rapid, temperature subnormal 98.6° , extremities cold. He arrived at 1:20 a.m.; had been stabbed a little after 12 o'clock. He was anesthetized. No perforation of the gut was found, and after exploring the intestines, which were covered with lymph, they were returned and the abdomen flushed and drained. Respirations 38, pulse increased to 130. Next day the pulse was 140, temperature 105.4° . The following day the temperature was 102.4° , pulse 150. He was given 1 ounce of salts. The bowels did not respond either to the salts or a laxative enema. An alum enema was given and resulted in a small stool. Three days after the operation he vomited a greenish fluid which later became brown, pulse rose to 160, the abdomen was tympanitic and the symptoms alarming. On the 9th of October he was given 3 grains of calomel followed by an alum enema. Passed much flatus, pulse rose to 163, but from that time the pulse continued to drop. On the sixth day he was given a hypodermoclysis, 300 or 400 cc., containing 1 ounce of whisky. I present this case because there was so much of the gut out and all the symptoms of an infection of the peritoneum. We could notice the fibrin on the intes-

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tines when he was first examined. The abdominal drainage was red, containing some clots.

Typhoid Perforation.

Report of Cases and Remarks Upon Diagnosis.

By HORACE W. SOPER, M.D.,

Chief of the Medical Clinic, St. John's Hospital,

ST. LOUIS, MO.

IT is not my purpose to present to you the literature of typhoid perforation. This has been done recently by Keen, Harte and Ashurst, J. Alison Scott, and others. For a complete review of the entire subject I would refer you to the excellent monograph by E. A. Babler. I wish in this paper to report cases illustrating the difficulties I have encountered in attempting the diagnosis of this condition. As a reminder of the importance of this subject I may be pardoned for quoting a paragraph from the paper read before this Society about a year ago by the eminent surgeon, Dr. W. W. Keen:

"Taylor states, that based upon the Census and the Marine Hospital Reports on the frequency of typhoid in the United States, we have about 500,000 cases a year with a mortality of about 50,000. Osler attributes about 30 per cent of the mortality to perforation. If this is so, there are annually about 15,000 deaths in this country due to perforation. On an average we can now save 30 per cent of these cases of perforation, which would mean 4,500 lives saved annually. In their recent paper, Harte and Ashhurst collected from January, 1898, to December 31, 1903 (the six years following my monograph), only 201 cases operated upon the world over. Yet, it would seem that in these six years in the United States alone 90,000 patients died from typhoid perforation, nearly all of whom should have been operated upon and about 27,000 lives saved. Have I not reason then to select the topic of the evening when it is so evident—so painfully evident, that the profession at large have not even begun to appreciate the need for operation in typhoid perforation? It is especially the family phy-

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sician, the one who attends typhoid fever, rather than the surgeon, who needs to be taught that perforation means operation, as a rule, just as he has painfully learned that, as a rule, appendicitis means operation. Iteration and reiteration are needful, here a little and there a great deal, and in time the profession will be convinced, but only, I fear, after the loss of many valuable lives."

Please note that these case records are not intended to be complete, but are purposely condensed to describe the signs and symptoms especially involved in the diagnosis of perforation.

CASE 1.—Male, aged 30 years, occupation bookkeeper, entered the Protestant Hospital in July, 1904, about the sixth day of the typhoid infection. The case was a mild one, the temperature ranging from 100 to 103°. No complications appeared and the case was progressing favorably in every respect, when suddenly, at the end of the third week, without known cause, the patient had a severe chill, followed by a drop in the temperature from 103 to 99°. I saw him a few minutes after the chill and he complained of feeling cold, the face had an anxious expression and he was perspiring freely, extremities were cold, pulse 120, small volume and low tension. No pain in the abdomen, no tenderness to pressure, no tympanites, no rigidity. One hour later severe pains began in the right iliac region, the muscles became rigid and distension could be made out. The pain persisted throughout the night and the tenderness, rigidity and distension rapidly increased. The temperature rose to 103°, the pulse became full and the tension high, and by 7 o'clock the following morning, twelve hours after the initial chill, all the symptoms of a general peritonitis were present. Operation was advised early and declined by the patient. Death occurred forty-eight hours after the first chill. No autopsy could be secured. This case is interesting chiefly because the symptoms closely approach what might be termed a typical case.

CASE 2.—A robust young man, aged 24 years, laborer by occupation, entered the ward at St. John's Hospital in June, 1905. The fever was of moderate severity and presented no difficulties in diagnosis, it lasted four weeks, during which time no complications arose, the temperature ranging from 101 to 104°. In the latter part of the fourth week, when the morning temperature was normal with 1° of evening rise, he was

seized at 4 a.m. with a sudden, sharp colicky pain in the abdomen, located about the umbilical region. A chill soon followed and he vomited a thin greenish fluid. The temperature rose from 99 to 103°, the pulse from 80 to 100. No dietetic error could be elicited as a probable cause. The pain, distension and fever persisted until 4 p.m. There was some general tenderness to pressure of the entire abdomen but no localization. No pain on micturition. The face wore an expression of pain and not one of collapse. The pulse was steady and of good volume and did not rise above 100. The tympanites was of high degree. Several high enemata were given and the symptoms gradually subsided, so that by the following morning he was as well as before the attack. Convalescence was uninterrupted and he made a good recovery. This case illustrates how a gastrointestinal disturbance may simulate a perforation. In deciding against this I relied chiefly upon the absence of rigidity of the abdominal muscles, the absence of localized tenderness and the character of the pulse and respiration; but the tympanites, pain, nausea and vomiting persisting for twelve hours were very disturbing factors, especially when I recalled the cases reported by Keen, where the patient's general condition remained good for twenty-four hours after perforation had occurred.

CASE 3.—Female, aged 24 years, entered St John's Hospital, September 30, 1905, after an illness of one week's duration. She was an extremely neurotic woman, and the case was an exceedingly difficult one to manage. The first three weeks were characterized by the following symptoms:

Insomnia, cephalgia, anorexia, nausea and occasional vomiting. Abdominal pain was frequently complained of, located chiefly in the upper segment along the rib margins; this I attributed to a dry, harsh, tearing cough which was very intractable to treatment. During this period the sensorium was clear. Tympanites moderate, temperature ranged from 101 to 104°, pulse from 120 to 140. At the beginning of the fourth week the clinical picture underwent a change, the toxemia deepened, delirium appeared, tympanites increased, stupor replaced the nervousness, the temperature remained near 104° and 105°. On October 20th, two days before death, the temperature reached 106.4° and pulse 148. The following day the temperature declined gradually, reaching 100.5° at 4 p.m. Accompanying this fall in temperature was a decided improve-

ment in the subjective symptoms. The sensorium became clear and the patient slept quietly. Also the distension was less marked and no rigidity could be detected. During the night she was extremely restless but did not complain of pain. At 8 a.m. the following morning she had a severe chill and the temperature jumped from 102 to 106°, the pulse reaching 150. I could not detect any change in the condition of the abdomen until 11 o'clock, three hours later, when the distension gradually increased, a general tenderness over the entire abdomen could be elicited and rigidity of the abdominal muscles palpated. The pulse became more rapid and weak and the extremities cool, vomiting now began at frequent intervals. Finally at 4 p.m. I secured consent to operate. This was done at 5 p.m. by Dr. Willard Bartlett. The perforation was found in the cecum about two inches from the ileocecal valve. It was pin head in size and a small stream of fecal matter could be seen spurting from it. A general peritonitis was evident. The intestine was sutured to the abdominal wall and a drainage tube placed in an incision above the pubes. Ether dropped on an Esmarch inhaler was the anesthetic used and very little sufficed. The patient was placed in Fowler's position and stimulation continued. The time consumed in operation was ten minutes and seemed to add no shock to the patient's condition, on the contrary, the ether seemed to stimulate the heart and respiration. The patient became progressively weaker and died at 12:10, a.m., seven hours after operation.

In this case the profound toxemia so masked the symptoms that the diagnosis of perforation was not made until the onset of a general peritonitis. In all probability the perforation occurred on the day before death when the temperature dropped to 100.5°, but the amelioration of the symptoms at this time was certainly very misleading.

CASE 4.—Male, aged 25 years, mechanic, entered St. John's Hospital, October 25, 1905, after two weeks' illness, during which time he was attended by Dr. B. Bribach, who made a provisional diagnosis of typhoid fever. We confirmed the diagnosis on the clinical picture presented, although the Widal reaction was reported negative. Slight tympanites was present, roseola well marked; his temperature ran a course ranging from 99 to 101° and everything looked favorable until October 30th, five days after entering the Hospital. He now began to complain of pains in the left lumbar region radiating

down to the left testicle, they were paroxysmal in character and quite severe. Renal calculus was suspected and the urine was closely watched. There was voluntary contraction of the abdominal muscles but no tenderness could be found, and no genuine rigidity was present. The pain became so great that morphia was administered hypodermatically. The pain subsided until 4 a.m. the following morning when it returned with increased intensity and the temperature dropped to 98.5° ; at 8 a.m. the pain was still severe, the patient had a violent chill, and the temperature rose to 103° ; the pulse which had been below 100 rose to 136, respiration 44. At 12 o'clock the temperature had reached 105° , pulse 160, respiration 56. Patient cyanosed, extremities cool, no distension of abdomen, no rigidity, but the patient persistently referred to the abdomen as the site of pain. After prolonged and careful search I was now enabled to locate a small area of consolidation in the left lung near the heart, this rapidly spread until by evening the entire left lobe was involved. The pneumonia proceeded as usual until the 7th instant when the rectal temperature dropped to 99.8° . On the evening of the same day pains appeared on the right side and a lobar pneumonia rapidly developed, the temperature rising to 104° . Expectoration which had been scanty, now became profuse. Examination of the sputum showed the presence of tubercle bacilli, also Friedlander's bacillus.

In this case there had been no symptoms to call special attention to the chest, not even the ordinary bronchitis of typhoid. The patient is alive but is losing ground daily, and I will probably make a more complete report later on. I have mentioned it here, because before the pneumonia was discovered there were good reasons for suspecting a perforation, especially when I recalled the warning of Osler: "That perforation and peritonitis may occur when the abdomen is flat or even scaphoid." Also, I remembered one of a series of cases recently reported by Dr. Geo. L. Hays in which no distension, tenderness, or change in temperature and pulse were present. He made the diagnosis solely on the symptoms of chill, pain, and slight rigidity; the operation disclosed the perforation and recovery ensued.

The Cause and Prevention of Post-Operative Cystitis.

By F. J. TAUSSIG, M.D.,

ST. LOUIS, MO.

IN THE prevention of the various diseases that on every side beset humanity and the cure of these manifold afflictions when they have already attacked their victims have heretofore occupied so much of our time and study, how much more reason is there to give more attention to those conditions directly resulting from our surgical procedures—conditions for which we ourselves, therefore, are in part responsible, that at times prove so troublesome to our patients and may even result in their death. Among the most frequent of these conditions is post-operative cystitis. Every gynecologic surgeon has had instances where his best results have been marred by this complication and his patients at times left in worse condition than before the operation. It was while working in the Kaiserin Elizabeth Hospital, in Vienna, in 1902, at a time when Wertheim was just beginning to obtain better results with his radical operation for uterine cancer, that the frequency with which post-operative cystitis followed this operation in particular, induced me to give the subject more study. To my amazement I found that the literature on the subject was practically a blank. The etiology of cystitis in general had been thoroughly investigated by such men as Melchior, Rovsing, Guyon and others, but that form appearing after operation, its cause, prevention and treatment was only mentioned casually in connection with other matters.

Investigations carried out at this Hospital with the kind permission of Professor Wertheim showed that out of 282 gynecological operations, cases in which the bladder was more or less denuded, 60, or 21 per cent had urine retention, and hence had to be catheterized longer than three days, and 43, or 15 per cent had to be catheterized longer than six days. Of these 43, all but one or two developed cystitis of greater or less severity.

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Frequency.—If I stated that in 43 of the 282 cases on my list a cystitis developed, it must be remembered that in 35 out of these 43 patients there had been done a radical panhysterectomy for cancer with extirpation of as much of the broad ligament as was possible. In two-thirds of the patients subjected to this procedure catheterization had to be resorted to for over a week. It would not be fair, therefore, to take 15 per cent as an average of the frequency with which post-operative cystitis occurs after gynecological operations. Yet, I find that Frankenstein who included only vaginal operations in his list records a post-operative cystitis in 9.3 per cent of his cases. The frequency of these bladder complications seemed to be directly dependent on the extent of the bladder denudation. Thus I found it to be only 2 per cent in vaginal hysterectomy, 14 per cent in the extensive operations for prolapsed uterus and 64 per cent in the Wertheim panhysterectomy for cancer. Frankenstein in similar wise recorded 0 per cent for simple Alexander's operation, 5.9 per cent for Alexander's operation combined with vaginal plastic and 9.5 per cent in more extensive vaginal operations.

In the past few years I have made inquiries to see whether the frequency of bladder trouble complicating the radical cancer operations was found in equal proportion by other men. From Professor Kroenig I received a letter stating that he had had 6 cases of cystitis out of 28 such operations. From Doederlein's clinic Baisch reports a majority of the patients operated upon for cancer suffering from urine retention but a considerable diminution in the percentage of cystitis owing to prophylactic bladder irrigation. Sampson, then working under Kelly, of Baltimore, performed even more extensive operations and his results prove how important a part the urinary tract plays in this operation. A cystitis occurring in 12 out of his 16 cases and twice an ascending renal infection resulted in the death of the patient. Finally, Brettauer, of New York, was kind enough to send me a complete urinary report of 3 Wertheim operations for cancer performed by him; in 2 of the 3 patients urine retention and cystitis resulted.

Causes.—Coming now to a consideration of the general causes that produce post-operative cystitis in women we have in the other forms of this trouble two main factors—traumatism and infection; the one is incapable of producing a cystitis without the other. A third factor, urine retention, is, as we

have seen in the clinical statistics, of the greatest etiologic importance, but its influence is almost wholly an indirect one, *i.e.*, increasing the danger of infection through the necessity of frequent catheterization. Kolischer has apparently misunderstood my point of view in this regard. Urine retention is not the immediate cause of cystitis, unless the bladder be allowed to dilate to such an extent as to cause trauma. No one would, of course, allow such a condition to arise. But the greatest danger of catheter infection resulting from such urine retention can not be gainsaid.

We must, therefore, in a consideration of the etiology of post-operative cystitis include those circumstances that tend to produce an inability to empty the bladder spontaneously. Other factors being equal, an abdominal operation will more often be attended with inability to void urine than a vaginal one for the reason that the former, to a certain extent, interferes with the proper action of the abdominal muscles. These muscles are of almost as great assistance in micturition as in defecation. In my series the frequency of urine retention after simple abdominal hysterectomy was 3.4 per cent, whereas after vaginal hysterectomy it was 2 per cent.

Furthermore, it is claimed that if the anatomic relations of the bladder to the other organs of the pelvis be greatly altered, we may more frequently expect a disturbance of its functions. It is not a rare thing that after Alexander's operation, when the bladder itself is not touched, urine retention occurs. Gutbrod seeks to explain this as due to the anteverted and elevated position of the uterus in this operation. The uterus thus not merely presses against the bladder but through its elevated position the urethra is bent anteriorly and the normal expulsion of urine interfered with. I can not say that this explanation is wholly justified by the actual anatomic condition. Just what the true cause of urine retention in these cases may be, still seems an open question.

Injury to and interference with the blood vessels and nerve supply of the bladder is doubtless more often to blame for inability to urinate spontaneously after operation than any other cause. It is but rational to suppose that if a greater area of the bladder be denuded and the afferent vessels to this region be ligated, the muscular action of the detrusor vesicæ in this region would be almost annihilated. If the vessels ligated supply a large portion of the organ or if the surface

denuded with its attendant multiple injury to the smaller superficial branches be extensive, the portion remaining will often be unable to expel the bladder contents. Thus can be explained the occurrence of urine retention after operations for vaginal and uterine prolapse. If we consider the excellent anastomosis of bladder vessels and the great rarity of bladder necrosis after even extensive denudation we must seek some other factor to explain the extraordinary frequency of urine retention after the radical abdominal operations for cancer. Both Sampson and Baisch concur with me in laying the emphasis here on the extirpation of the ganglionic system lying in the broad ligaments. By shutting off a great part of the nerve supply of the bladder, as we do in this operation, it is not surprising that we should find a long-enduring paralysis of the detrusor vesicæ with consequent inability to void urine.

Traumatism.—From what has been said about the blood supply it is evident that in many operations, particularly if the bladder be handled roughly, the organ will be subjected to much contusion. Ecchymotic areas are found with comparative frequency and a superficial desquamation of epithelium is not at all rare. Stoeckel in his excellent book, "Cystoskopie des Gynaekologen" devotes a chapter to the cystoscopic appearance of the bladder after operation. After hysterectomy he finds quite frequently submucous hemorrhage in the bladder fundus. These are doubtless associated with hemorrhages in the bladder wall and may be due either to trauma in separating the bladder from surrounding structures or to venous stasis resulting from the ligation of the bladder vessels. That the catheter is not to be blamed for the hemorrhages he shows conclusively. One case in which the trauma during operation was practically *nil* and urine was passed spontaneously, showed cystoscopically extensive ecchymosis. These Stoeckel ascribes to venous stasis resulting from interference with blood supply. No cystitis developed in this case.

Naturally the danger of cystitis is even greater where the bladder has been either accidentally or purposely incised in the operation. Ureteral implantation into the bladder is necessarily attended with the exposure of more or less surface in the bladder.

Infection.—Even the most extensive injuries, however, are insufficient to produce a cystitis, if we can exclude the entrance into the bladder of pus-producing micro-organisms. In

illustration of this I should like to cite a series of animal experiments recently made by me on the bladders of rabbits. In 9 cases the superior vesical and the vesical branch of the uterine were ligated and cut on each side and wherever the rabbit had attained puberty the tubes, uterus and upper vagina were extirpated as in the cancer operations. As the work was done without assistance the asepsis occasionally suffered, and in 2 cases a stitch abscess developed. All the rabbits survived the operation and were killed at varying times, varying from five to twenty days.

In the rabbit the superior vesical artery can be distinctly seen coursing upward to the vertex of the bladder and its ligation is a comparatively simple matter. I found that after tying it could be cut without danger of bleeding from the distal end by anastomotic vessels.

Following is an abstract of the cases:

CASE 1.—Female, adult. Operation November 20, 1903. Morphine 0.03 gram, followed in three-quarters of an hour by chloral 0.3 gram. Vesical arteries tied, uterus and tubes extirpated. Rabbit roused from anesthesia before conclusion of operation. Infection probable.

November 25th, rabbit recovered from operation. Killed by cervical fracture (Nackenschlag). Post-mortem, abdomen showed localized suppurative peritonitis in pelvis, a sac containing yellowish pus near the left ureter. Intestines adherent to fundus of bladder. Bladder one-third the size previous to operation. On opening the bladder a *suppurative cystitis* localized to the vertex was discovered.

CASE 2.—Female, adult. Operation November 3, 1903. Tied both superior vesical arteries, removed uterus and tubes. November 21st, rabbit killed. Bladder rather high; adhesion of large gut to left side of bladder. Slight injection of vessels of trigone. *No cystitis*.

CASE 3.—Female, young. Operation November 8, 1903. Tied off and cut all vesical arteries and veins. Accidentally perforated the bladder fundus with needle point; some urine escaped through this opening. November 13th, rabbit killed. Bladder adherent to intestines. Vertex of bladder contained several dark red thrombotic areas. Bladder contained 2 cc. of clear urine. *No cystitis*.

CASE 4.—Female, young. Operation November 10, 1903. Ligated and cut superior vesical and uterovesical arteries. November 21st, rabbit killed. Slight adhesion to abdominal wall; stitch abscess near left vesical artery. Urine cloudy; fundus shows profuse *purulent cystitis*. Base of bladder free; bladder greatly contracted.

CASE 5.—Female, adult. Operation November 8, 1903. Tied

vesical arteries as heretofore and removed uterus and tubes together with 3 1/2 cm. of vagina. November 13th, rabbit killed. Fundus adherent to abdominal incision; bladder contained only 2/3 cc. clear urine. Fundus shows thrombosis; base normal. *No cystitis.*

CASE 6.—Female, adult. Operation November 1, 1903. Tied all four vesical blood vessels. November 14th, rabbit killed. Intestines adherent to fundus, vessels going from mesentery to fundus, no thrombi visible. Bladder contracted and empty. *No cystitis.*

CASE 7.—Female, adult. Operation October 3, 1903. Tied the uterovesical and superior vesical arteries on both sides. November 1st the abdomen was opened, bladder found to be apparently normal. Compensatory circulation apparently established through the peritoneal fold. Tubes, uterus and two-thirds of the vagina removed, all blood vessels tied near their point of origin. November 14th, rabbit killed. Bladder very small, no adhesions. Fundus showed regenerated thrombotic area. *No cystitis.*

CASE 8.—Female, adult. Operation October 17, 1903. Two superior vesical and one uterovesical branch tied off. October 27th, rabbit killed. Adhesion of fundus to abdominal incision, urine clear, no signs of thrombosis. *No cystitis.*

CASE 9.—Male, adult. Operation November 20, 1903. Superior and middle vesical arteries tied. November 25th, rabbit killed. Adhesive peritonitis, no pus to be seen, bladder walled in by intestinal adhesions and contained large hematoma in left wall. Considerable edema. *No cystitis.*

Microscopic sections were made of various portions of the bladder in all 9 cases. In the 2 that developed a cystitis a well-marked pyogenic membrane was found upon the hematomaous area. The infection was, however, localized to this area. The remainder of the bladder mucosa was intact and showed no leukocytic infiltration. The cases that developed no cystitis and where the animal was killed within five days after ligating the vessel, were uniformly characterized by the presence of larger or smaller hemorrhages into the muscular and mucous coat. Over such areas the epithelium was at times absent, at times it was partly cast off or edematous. Here, too, the affected portion was sharply differentiated from that in which no disturbance of circulation had occurred. In those rabbits that were killed, two to three weeks after operation the regeneration was practically complete, only here and there a small sanguino-fibrinous patch marked the site of a former hematoma. The epithelium was intact. As far as they go, therefore, the experiments show the close correlation-

ship of trauma and infection in the etiology of cystitis. In spite of the severest trauma, no germs being present, a cystitis failed to develop, and *vice versa*, where germs did gain an entrance, the cystitis was localized to that area in which the trauma occurred.

The manner in which bacteria may gain entrance into the bladder is various. To begin with, it must be remembered—Kolischer lays great emphasis on this point, that many patients have a cystitis before operation. It may have given rise to a few if any symptoms and so been overlooked. So uncertain, in fact, is the symptomatology of this trouble that Sampson insists that a cystoscopic examination should be made and bacteria found in the urine before the diagnosis can be determined. A previous cystitis may in part account for the comparative frequency of bladder trouble after prolapse operations. However, out of the sum total of post-operative cystitis, this factor of previous infection is of secondary importance.

Next we come to the cases of spontaneous entrance of germs from the urethra, the rectum and the vaginal wound either directly or along the lymph channels. No direct proof of such an occurrence has as yet been given though much evidence points to some form of spontaneous infection. We know of cases of free cystitis who, after operation and without catheterization, developed a cystitis. I can not here go into a consideration of the animal experiments on this subject more than to say that apparently, if there be trauma to the bladder and also some break in the continuity of the rectal mucosa colon bacilli may wander through the intervening cellular tissue and cause an infection. Baisch claims that these cases of spontaneous infection are due rather to an ascent of bacteria from the urethra. The careful bacteriological examinations of the female urethra carried on by Pilz under his direction certainly showed in a large percentage of cases the presence of pus-producing micro-organisms. A certain analogy would appear between this mode of infection of the bladder and that of spontaneous ascent of germs from the vulva into the uterus *post-partum*. Kolischer argues that the germs found in the urethra a non-virulent type and hence, would not produce infection. Natvig has, however, shown that while the virulence of germs on the vulva may be very mild, yet those same germs introduced into the uterus may become extremely

dangerous and give rise to the most severe infection. Virulence seems to depend primarily on the point of implantation. Thus, germs that are innocuous in the urethra may start up an intense cystitis if either by catheterization or spontaneously they gain entrance to a susceptible bladder. Kolischer and Stoeckel both believe that in many cases the bacteria that give rise to the cystitis pass through the bladder wall from the wound cavities. Certainly, as Sampson points out, where the ureter has been implanted into the bladder, germs may readily find a point of entry from the vaginal wound along the ureteral sheath. If this, however, were the usual mode of infection we should expect it to occur more frequently wherever there was trauma.

We find, however, that in the vaginal panhysterectomies performed by Wertheim, numbering 102 cases, a large percentage of which were associated with suppurative conditions requiring drainage, only 2 or 3 per cent developed a cystitis. While such spontaneous infection may, therefore, be of more frequent occurrence than has been heretofore admitted, I think reports thus far justify the belief that in the vast majority of cases the catheter is to be held responsible for the bladder infection.

Kolischer speaks of uncleanness in catheterization as if this were the usual way in which catheter infection was brought about. The modern glass catheter can be so easily sterilized and the female urethra so readily exposed that with moderate care the danger of infection from germs in the catheter or bacteria lodged about the vestibule is very slight.

It is different, however, with germs residing in the urethra. Hoping in some way to reduce the frequency of bladder infection in his cancer cases, Wertheim for a time had every catheterization done by the house surgeon under aseptic precautions after repeatedly mopping the meatus urinarius with a 1/1000 bichlorid solution. His results remained the same as heretofore.

Baisch examined the urethral secretions of 30 women entering his clinic. In every case staphylococci were found, and in 20 of the cases the colon bacillus likewise. Since the colon bacillus is found with such great frequency in post-operative cystitis, he decided to supplement his examinations by examining bacteriologically the urethral secretions of 45 women free of cystitis who were confined to bed for some operative

condition. In these 45 cases he *invariably* found the colon bacillus, appearing after the third or fourth day. Similar tests with similar results were made on women who were not operated on but simply confined to bed. Furthermore, Baisch showed that urination itself cleanses the urethra of many germs. Patients who were told to empty their bladder only twice a day showed pathogenic germs in their urethra that heretofore had not been present.

The question arises, can the urethra be made sterile by irrigation previous to catheterization? While bacteriologic tests are, to my knowledge, lacking on this point, clinical experience at Wertheim's Hospital showed that irrigation of the urethra with one pint of boric acid, before each use of the catheter did not suffice to prevent infection. Considering the anatomy of this canal, it would certainly seem impossible to free it of bacteria. In this connection I quote Piltz's conclusions:

"Since a disinfection of the urethra is impossible, numerous pathogenic micro-organisms are carried from the urethra at each catheterization, and here, under certain circumstances, (urine retention and trauma of the bladder wall), they may give rise to a cystitis. We must, therefore, ascribe to pathogenic germs vegetating in the female urethra an important, if not the main, influence in the etiology of catheter-cystitis."

Finally, one point not sufficiently emphasized in the etiology is the influence of the frequency of catheterization upon infection. Why is it that one or even half a dozen catheterizations usually are harmless, whereas if the number reach fifteen or twenty, infection is the rule? It is this fact more than any other apparently that leads Kolischer to the belief that the catheter is not usually the infecting agency. I grant that we are here touching upon matters that are still much in the dark, but apparently there seems to be a point beyond which the human organism can no longer resist the invasion of pathogenic germs. It is a well-known fact that the peritoneum, for instance, can take care of a considerable number of pathogenic bacteria. The same capacity resides with the bladder, but with each attack the viscus is left in a condition less resistant to infection. Apparently it is "the straw that breaks the camel's back." Between the fifth and seventh day, as a rule, the limit of endurance is passed and we have a sudden and tremendous increase in the number of bacteria, al-

most invariably confined to one sort, and associated with objective and subjective signs of bladder inflammation.

To repeat briefly the main points in the etiology of this condition :

1. Post-operative cystitis is met with not at all infrequently after gynecological operations, particularly after the radical abdominal operations for cancer.—60 per cent.

2. The frequency and severity of the affection is directly proportionate to the amount of bladder denudation.

3. The two main factors in the etiology are trauma and infection, to these a third, urine retention, may possibly be added.

4. Urine retention is only to a slight degree a direct factor in the etiology by giving a chance for bacteria to multiply in the stagnating urine. For its relief, however, it requires the introduction of a catheter and this is undoubtedly the most frequent cause of post-operative cystitis, so that indirectly it is of the utmost importance in a consideration of the etiology.

5. The urine retention may be due to a bend in the urethra caused by malposition (after Alexander's operation) or to paralysis of the detrusor vesicæ due to interference of its blood supply or to excision of a portion of its nerve supply.

6. Trauma in these cases is usually due to ligation or bruising of the bladder vessels. To these is occasionally associated an incision into the bladder either accidentally or, as in carcinoma or ureteral implantation, intentionally.

7. The bacteria producing the infection may be originally in the bladder (previous chronic cystitis). They may have migrated from the rectum, the vaginal wound, along an implanted ureter, or by ascent from the urethra. Such modes of entry are doubtless the exception. The rule is that a post-operative cystitis is primarily a catheter cystitis.

8. Investigations show that every urethra in women confined to bed contains not merely staphylococci but colon bacilli as well. The disinfection of the urethra is an impossibility. Hence, with each catheterization, germs are carried into the bladder.

9. A few catheterizations rarely produce a cystitis. When, however, the number is increased as in retention prolonged to five or six days the organ seems no longer able to resist the invasion and a rapid multiplication of bacteria with beginning inflammation results.

Prevention.—The prevention of post-operative cystitis is in a great measure dependent on a proper appreciation of its causes. Considering the latter in the same sequence as before, our first consideration will be: What can be done to avoid post operative urine retention?

Urine Retention.—Numerous have been the suggestions offered thus far but all have their drawbacks. No measure is uniformly successful. Werth, of Kiel, after his laparotomies fills the bladder with sterile salt solution at body temperature before closing the peritoneal cavity. As the capacity of the bladder varies greatly it is necessary to keep it under direct surveillance while filling it. Frankenstein recently published the results of Werth's suggestion in the hospitals of Kiel. After this procedure in only 85 out of 875 laparotomies was there post-operative ischuria (9.7 per cent), whereas without this procedure it occurred 57 times in 91 cases (55 per cent). The post operative cystitis was reduced from 11 to 2.9 per cent. For vaginal operations the method did not seem so applicable, the reduction of urine retention was only from 55.5 to 38.6 per cent. Personally, I have no experience with this method but believe that it would hardly influence the class of cases in which urine retention persists a long time.

From Baisch comes the recommendation to inject 20 cc. of a 2 per cent boroglycerin solution into the full bladder on the evening of the operation. He claims that this procedure has been almost invariably successful in producing spontaneous urination in all cases except the radical operations for cancer. In the latter it failed to have any effect. Only rarely does the injection have to be repeated. Occasionally considerable discomfort is experienced by the glycerin injections. In my experience they proved a greater stimulant to the detrusor than any of the methods previously recommended, such as faradization, massage, hot applications, or strychnin injections. Several times, however, the effect seemed only to be temporary, and after one or two spontaneous urinations, retention would again set in. At times, also, we noticed that in spite of spontaneous urination there would still be considerable urine left in the bladder. Cystitis occurred in two of our cases, and the suspicion can not be avoided that this, in part, may have been due to the hyperemia produced by the glycerin. Frankenstein reported failures by this method in 50 per cent of his cases. Baisch's success, however, certainly warrants

giving this plan a fair trial before abandoning it. It should be added, that in every case the instructions of Baisch to catheterize if urine was not voided in thirty minutes was carried out.

Apparently, Ries has had unusual success in avoiding post-operative urine retention by permitting his patients to get up to void urine a few days after operation. I doubt if he would find many to agree with him in permitting a patient on whom had been done an extensive vaginal plastic or a radical operation for cancer, to get out of bed as early as the third day. On the other hand, I have had patients propped up in semirecumbent posture to void urine as early as this, with good results and believe where urine retention exists, we should get patients out of bed as soon as it is reasonably safe. Doubtless our ideas of the dangers of such a procedure have been exaggerated but the safety of Ries' suggestion needs further proof before it can be generally recommended.

Failing in my efforts to find some means of stimulating the detrusor, I attempted in a few cases at Wertheim's clinic a dilatation of the urethra sufficient to produce a paralysis of the sphincter or at least a decrease of its tonicity. The success was only partial and on the strength of a case at Johns Hopkins Hospital in which Dr. Sampson was kind enough to give this method a trial, I must hesitate to recommend it. Here dilatation up to number 14 Hegar after operation resulted in urinary incontinence. In spite of this there was a large quantity of residual urine. It was only the overflow that passed out of the bladder involuntarily. A severe cystitis developed.

The introduction of a retention catheter has been recently recommended by Gutbrod. Theoretically it would seem that by so doing we would avoid the danger from infection resulting from repeated catheterization. Gutbrod used this method exclusively after colporrhaphies or Alexander's operation. The catheter was left in the bladder for five days. He gave urotropin 0.5 gram three times a day during this time and reported in 50 cases no cystitis. Like several other suggestions already considered, this procedure while applicable to the simpler operations, is ineffective, even dangerous, in the more extensive ones. Sampson in 4 of his radical operations for cancer used a retention catheter. In all 4 a cystitis developed, resulting twice in ascending renal infection and death. In a

3rd case a patchy membranous cystitis developed, the patches corresponding to those portions of the bladder that came in contact with the catheter. Sampson declares that such a catheter can not be kept sufficiently clean.

No work has done so much to throw light upon the problems of bladder and ureteral injury after the radical cancer operations as has that of Sampson. One of the most interesting facts connected with his experiences is that out of 4 cases in which no cystitis developed, there was 3 times a vesicovaginal fistula, or to put it a little differently, three such fistulae developed in his 16 operative cases and in all three instances the bladder remained free from inflammation. How are we to explain this interesting fact? That bacteria had gained entrance was proven bacteriologically, trauma was certainly present, and yet there was no cystitis. Sampson believes that the reason no infection developed was that the bladder was in a state of rest with opportunity for perfect drainage. Sampson is unwilling to recommend making a vesicovaginal fistula artificially for the relief of urine retention after cancer operations. He says, however, that if in spite of bladder irrigations following catheterization a cystitis developed and this does not yield promptly to treatment, a vesicovaginal fistula should be made for the relief of the cystitis.

It seems to me these cases of vesicovaginal fistula are additional evidence to the theory of cumulative infection in this form of cystitis as already outlined. The introduction of a few germs at repeated intervals will for a time be successfully resisted by the organism but each time it becomes less resistant to infection than before. If there be no opportunity for the bladder mucosa to return to its normal state an infection will invariably result. But if on the other hand through a vesicovaginal fistula the bladder be allowed to remain in a state of rest and the bacteria that enter be given no chance to multiply in a stagnating urine, it can successfully resist the invasion of the germs present until the traumata of the operation have healed. By this time the fistula itself will be almost closed, but the germs in the bladder have now to deal with a bladder cured of its traumatic areas and able to expel urine spontaneously. Hence no cystitis results.

Trauma.—It need hardly be said that for the prevention of cystitis we should always guard against handling the bladder roughly. Many operators are careless in the use of he-

mostats to check vesical bleeding. Where uterus or vagina are separated from the bladder in the right layer there should be very little occasion to use any hemostats. Furthermore, in operations where extensive denudation occurs, as in those for uterine cancer, the area as Kroenig suggests should again be covered as far as possible with peritoneum. Glockner reported that after following Kroenig's suggestion his percentage of post-operative cystitis in cancer cases fell from 77 to 44 per cent.

Infection.—The proper disinfection of catheter and external meatus does not here require special mention. As already stated the greatest danger lies in the germs normally found in every urethra. Irrigation of the urethra prophylactically was found to be of no avail. We have finally the double catheter of Rosenstein. This consists of an outer shield resembling a short urethroscope, through which is passed the catheter proper. In this way Rosenstein wishes to avoid the introduction of germs into the bladder. The objection to his instruments I have stated in a previous communication and will not here repeat. More recently Rosenstein published a report of 34 cases in which he had used his catheter with only one infection. Striking in this report, however, is that in only one half of these 34 cases was the bladder touched in the operation and in but 7 cases was the catheterization repeated over fifteen times or estimated at three times a day, over five days. We can not say that Rosenstein's double catheter guards against infection until there exists more clinical proof and until bacteriologic examinations show that in fact no bacteria are introduced into the bladder by its use. Still, while emphasizing the necessity for further proof, I believe some such modification of our method of catheterization ought to lessen the chance for infection very much.

Granting that germs have been introduced into the bladder, our prophylaxis finally extends itself to the means at our disposal of rendering them harmless. Medicinally urotropin and its related compounds helmitol, cystogen, etc., undoubtedly give to the urine certain antiseptic properties. Wannier, Sachs, Schumburg, and Groszlic have all treated this question experimentally. Their results correspond with our clinical experience at Wertheim's hospital. Mild cases of infection were soon exterminated, but the severer ones not appreciably affected. Its prophylactic use was attended with no positive success.

Irrigation of the bladder with protargol solution was tried by Wertheim extensively, commencing the day after operation but did not yield the expected results. On the other hand Baisch found that by irrigating the bladder after each catheterization with one pint or more of 3 per cent boric acid, post-operative cystitis only rarely developed, even after the extensive cancer operations. He has recently given a detailed report of his results. Out of 31 patients on whom a radical abdominal operation for cancerous uterus had been performed only 1 was able to urinate spontaneously on the evening of the operation; 5 died; the remaining 25 were subjected to bladder irrigation following operation, sometimes for as long as eighteen days. Only three of them developed a cystitis and in but one case was it a severe infection. Sampson failed to get results even with this method, for in four out of 5 cases in which he tried it, cystitis arose. I believe Baisch does well to emphasize the importance of carrying on such irrigation until there is no longer any residual urine. For, in many cases a spontaneous urination may occur without the bladder being completely emptied. I recently had a good illustration of this point. A patient on whom I had done the extensive Wertheim plastic for complete prolapse was unable to void urine after operation. She was catheterized and irrigated after each catheterization. On the fourth day after operation there were four spontaneous urinations but the total amount was not great. Suspecting a retention I catheterized and found in the bladder 20 ounces of urine. In spite of continued spontaneous urinations she was catheterized twice daily and irrigated with $1\frac{1}{2}$ pints of boric solution until the tenth day when there was no longer any residual urine. No cystitis developed.

For prophylactic measures boric acid irrigations are probably to be preferred to silver solutions since the latter would, if used frequently, give rise to irritation. While requiring much care and time for their use, they are probably the most effective means of avoiding bladder infection after operation.

The chief points in the prophylactic would, therefore, be:

1. Try to avoid urine retention by the use of one or several of the following methods, filling the bladder with sterile water at the conclusion of the operation, injecting boroglycerine solution into the full bladder, having the patients sit up out of bed as early as the nature of the operation will allow.

2. In the operation handle the bladder carefully and cover its denuded surface as well as possible before the close.

3. Prevent the introduction of germs from the urethra as far as possible by using a double catheter such as devised by Rosenstein.

4. Internally you may give urotropin, helmitol, etc.

5. Above all, wherever catheterization has been continued for some time, irrigate the bladder each time with 1-2 pints of boric acid solution and continue such irrigations with each catheterization not merely until the first spontaneous urination but until there is no longer any residual urine.

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Cerebellar Tumor of Syphilitic Origin.

By J. J. SINGER, M.D.,

ST. LOUIS, MO.

THE case to be presented tonight is one in which a diagnosis of gumma of the cerebellum, was made in June, 1904. •

The patient, F. L., female, aged 22 years, married at the age of 16 years; first child at 15 years of age; three children after marriage; three children died in infancy. The patient thinks three of them died of lues. Husband was a physician, so patient claims. She had no miscarriages.

She claims never to have had venereal trouble until February of 1904; at that time thinks she had chancroids. Gives no symptoms of chancre or secondaries.

Occupation.—Waitress.

Habits.—Inclined to be sexually loose; does not drink or smoke. There is a family predisposition to phthisis.

In March of 1904, the patient fell backward from a chair striking the back of her head against a radiator; became unconscious and remained so for half an hour or so. Since that time, complains of severe headache and dizzy sensations.

*Read before the Medical Society of City Hospital Alumni,
December 7, 1905.*

A short time after, while riding in a street car, she knelt down, unconsciously to pray; she was removed from there by the police and sent to the City Hospital for observation. Her case was diagnosed as hysteria, and in a few days she was transferred to the Female Hospital.

While here she complained of such severe headache as to keep her awake all night; she also kept everybody else awake by her wild shrieks, and was therefore, transferred to the observation ward, where she could not disturb anyone.

On June 6, 1904, she showed the following symptoms:

1. *Headache*.—Of the occipital type, well-marked, for she continually kept her hand over that part. Now and then she would scream with pain, especially at night.

2. *Vomiting*.—Vomited very frequently, and often it was of the projectile type. There was seldom any retching or nausea.

3. *Vertigo*.—In this the case resembled a cerebellar ataxia; on the slightest motion the dizzy sensation was manifest. The patient could scarcely stand; she would reel as if drunk if she attempted to walk; consequently, she remained in bed all the time and while in bed there was no vertigo.

4. *Mental State*.—Memory was practically blank; was childish, crying or laughing for no apparent cause. Imagined she heard people in the room speaking ill of her; at times she would curse and use foul language.

5. *Speech*.—A sort of aphasic condition was present. She often wished to say things; knew what to say but could not articulate them; at other times when she could speak it was of a scanning nature.

6. *Vision*.—Unfortunately on intraocular examination no trace of optic neuritis was seen. However, the pupils were both widely dilated; she could not read or write then, but could before this attack and does now after the attack.

7. *Appetite*.—Was poor; the patient became quite emaciated.

8. No fever or night sweats.

All these clinical symptoms warranted a diagnosis of tumor of the cerebellum, probably gumma. As to its being a gumma, the therapeutic test proved it to be correct; she was therefore, put on antiluetic treatment of the third stage.

Treatment.—Iodid of potassium was given her together with tincture of nux vomica; she was given 20 grains per dose

six times in the twenty-four hours, increased 5 grains per day. Tincture nux vomica, 10 minims.

After one week of treatment, the patient began to show beneficial effects of the iodid. In three weeks, headache was very slight, speech was somewhat but still slightly scanning in nature; vomiting had ceased; vertigo still present but not marked. The patient could walk about her room reeling slightly. About this time she began to be able to read and write; her pupils were not so dilated; disposition was entirely changed; was pleasant and very thankful and polite; her memory had returned.

She was now getting 10; grains of potassium iodid four times in the twenty-four hours; no iodid eruption throughout. The dose was then reduced to 50 grains three times per day and increased 10 grains per day.

July 15, 1904, the patient was well enough to be used as a detail on the division.

July 18th, a small, hard mass, about the size of a walnut, was felt over the right linea aspera; about the middle portion, there was slight pain but no inflammation. The potassium iodid was then increased, also $\frac{1}{8}$ grain of the protoiodid of mercury was given. The tumor disappeared in a week.

July 30th. The patient was discharged; had picked up in weight and showed no more symptoms of tumor of the brain. She was cautioned, however, to place herself under constant medical care.

She visited the Hospital every few weeks but after two months returned as a patient. She showed the following symptoms: Slight headache, vertigo, loss of appetite, somewhat emaciated, drowsy feeling. Potassium was again given with good results. About this time, we had no potassium iodid in the institution and did not have any for two or three weeks. During this time, the patient's headache and vertigo returned, and on given potassium iodid again these symptoms disappeared.

Present Time.—Knee jerk is slightly spastic; ankle clonus not marked; Babinski sign present; all these showing evidence of previous brain lesions.

Although the patient feels quite well now on the suspension of potassium iodid, the headache, which is now frontal, returns.

REFERENCES.

Anders says, "In regard to tumors of the cerebellum, middle lobe, there is headache, vomiting, vertigo, ataxia, reeling gait, staggering, falling, optic neuritis, and possible deafness."

Tyson says, in regard to mental symptoms, "There are peculiarities of temper, sullen, indifferent, absentminded, loss of memory, mania, and often convulsions."

Osler says that patients with cerebellar tumor often give symptoms resembling dementia paralytica.

Butler says that there is somnolence, mental slowness, weakened memory, loss of power of attention, childishness, and speech disturbances. In regard to cerebellar ataxia he says, "Patients walk in a reeling manner and while in bed they show no ataxia."

Church and Peterson say, in regard to treatment, that patients who have had attacks of cerebrospinal ataxia are never safe and must be under antiluetic treatment all their lives.

Penetrating Wounds of the Abdomen.

Much discussion has arisen, especially since recent wars have afforded many examples as to whether penetrating wounds of the abdomen should or should not be treated by laparotomy. Winslow (*Journal of the American Medical Association*) gives results of 29 cases as follows:

Total number of undoubted penetrating wounds 29; cases in which laparotomy was not done 5, of which 1 recovered and 4 died, a mortality of 80 per cent.

Penetrating wounds of the abdomen in which laparotomy was done 24; of these 15 recovered and 9 died, a mortality of 37.5 per cent.

Penetrating wounds of the abdomen with perforation of hollow viscera 20; 11 recovered and 9 died, a mortality of 45 per cent.

Gunshot wounds with perforation of hollow viscera 16; 7 recovered and 9 died, a mortality of 56.25 per cent.

Stab wounds with perforation of hollow viscera 4; all recovered.

Penetrating wounds in which various lesions were found, but without actual perforation of hollow viscera, in which laparotomy was done, 4 patients all of which recovered.

Such a comparatively small number of cases are not conclusive, yet, a mortality of 80 per cent non-operative and 47.5 per cent with operation is suggestive.

EDITORIAL COMMENT.

• Special Announcement.

We desire to announce that beginning with the April number the plan of the Journal will be entirely changed. For several years the *COURIER OF MEDICINE* has represented the best St. Louis medicine, and has been the official organ of several local medical societies. Since the general establishment of State medical journals, State and county matters are generally disseminated, hence the private journals must find other fields to cultivate.

We propose to establish a digest of medicine which shall present in an attractive form that medical science which is not usually found in State or National medical journals. The whole world will be ransacked for something good. The old will be placed with the new, and forgotten discoveries rediscovered.

Nothing will be accepted in our original department which does not contain original observations or investigations. On the whole, the most attention will be given to etiology, diagnosis and treatment, entirely from the standpoint of the progressive general practitioner.

This Journal, therefore, will be an adjuvant to the State and National medical journals. In addition, the prevailing interesting topics will be discussed editorially. We propose to make a journal which will be generally valuable to every practicing physician, it matters not what periodicals he already receives.

Oliver Wendell Holmes.

Sixty years have past since the renowned American essayist and poet, Oliver Wendell Holmes, first announced the true nature of puerperal fever, and lately some of our writers are beginning to give him credit. His study was published some years before the researches of Semmelweiss were made public, although the latter usually receives the distinguished merit of being the discoverer of the septic nature of puerperal fever.

But the leading American obstetricians bitterly opposed his views and his discovery was dropped. In a recent address by Cullingsworth (*British Medical Journal*, November 4, 1905) the magnificent work of our poet is revived. His method of reasoning from certain facts to the infectious nature of this disease must stand as a model to the enthusiasts engaged in clinical investigations.

Alcoholism.

The remarkable views of Dr. Reid, of Great Britain, on alcoholism have attracted considerable attention. Every race is temperate in proportion to its past experience in alcohol, is his basic proposition. This has by no means been proven, and it remains for further investigation to verify or refute this argument. That the abuse of alcohol should render a people less indulgent to alcohol by the extinction of the drunkard is an old law but still not clearly demonstrable. Dr. Reid calls attention to two methods of temperance reform: The elimination of drinking and the elimination of the drunkard, the latter being Nature's very effective method. (See editorial in *Med Record*, December 23, 1905).

The law of the survival of the fittest is not the only one which modifies the human race, but Dr. Reid is interesting.

Don't Scold the Practitioner!

Why this censuring of the practitioner for his willingness to be duped by the promotor or nostrum vendor? It is a weakness which is a necessary part of a busy life. Why not go at the root of the matter, see that physicians are better paid and insist that they shall not slave day and night, give some thought to business methods and some study to modern pharmacology.

Our articles on therapeutics in medical journals are often unreadable matter. The manufacturing chemist has learned the art of teaching; the medical teacher can learn much by following his methods. Conciseness, clear demonstration and constant repetition are necessary to keep any valuable therapy as a part of the armamentarium of the healing art. The physician is not lazy, he is sometimes careless, but most often only human.

Contagiousness of Pneumonia.

The harmlessness of pneumococcus found in the mouth of nearly every individual is generally conceded as far as its host is concerned, but when carried to others may become very virulent. Pneumonia is, therefore, not autogenetic but heterogenetic, the virulent pneumococcus is obtained elsewhere. Dr. Biehn, of Chicago, recently published some interesting observations, namely, that rabbits injected intravenously with the sputum of one healthy person did not develop pneumonia, but when the sputum of two or three persons was mixed and injected, pneumonia invariably developed. The symbiosis of different germs, or the same germs from different sources, is as yet untouched in our studies and will probably explain much that is not understood.

Rye Bread in Diabetes.

It has not been long, since we first heard that potatoes were less harmful to diabetic patients than wheat bread. Another authority has suggested oat meal as the principal carbohydrate to be used in such affected persons. The latest contribution to this diet list is rye bread. Black rye bread or pumpernickel is highly recommended by Lidwell, he having found that the sugar is very much diminished under this diet. The patient increases in weight and feels much better.

A comparative study of potatoes, oat meal and rye bread is now in order to verify these conclusions and to determine the relative value of each of these starchy foods.

Renal Diarrhea.

We are now beginning to speak of a diarrhea of the kidneys as well as the intestines. It is an old theory that certain chemicals, *e.g.*, sodium chlorid, pass out of the kidneys mechanically with the water, while certain other substances, *e.g.*, ureas, need a special secretory activity of the renal epithelium. But the former constituents of the urine may be reabsorbed. Certain salts may check this resorption, as in the intestine, and thus produce a tubular diarrhea. The intestinal tube and urinary tubules show certain analogous formations, there are in both a secretory part and a resorptive part. The interference with resorption leads to polyuria, just as in the large intestine a checking of the absorption of fluid leads to purgation. Loewi has done good work in calling attention to this analogy.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of November 2, 1905 ; Dr. John Green, Jr.,
President, in the Chair.*

Dr. FREUND presented a patient (see page 135, this issue) on whom

Splenectomy for Rupture of the Spleen

had been performed.

DISCUSSION.

Dr. ELBRECHT thought the City Hospital had been particularly fortunate in getting this line of work. A few years ago these operations were undertaken with a good deal of timidity but the fact that they were undertaken had taught surgeons a great deal about the subject. The fact that the hemoglobin was so low was particularly interesting. The blood was the most valuable thing to study in this case from now on, since the surgery was complete, and was a most beautiful piece of work. Dr. Carstens, of Detroit, had reported three cases of splenectomy with recovery. The blood in this case should be studied further to see what physiological changes were brought about.

The PRESIDENT asked if any one could enlighten them as to the ultimate condition of these spleenless individuals. Did they get along well indefinitely ?

Dr. BAUMGARTEN, replying to the question by the President, said that no reports had been made of cases that had been followed sufficiently to determine any definite change in the blood picture ; after a prolonged period there had been changes, but they were not uniform.

Dr. GARCIA suggested that the case be kept under observation and reports sent in later, say one six months from date and another at the end of a year.

Dr. ELBRECHT suggested that the patient be asked to return to the Hospital to report from time to time. In the three cases operated upon by Carstens no ill effects had been noticed.

Dr. FREUND, replying to a question by Dr. Baumgarten, said that the number of red cells were less than normal.

Dr. KIRCHNER said that in the case operated upon by Dr. Brown which recovered there were no untoward symptoms.

Dr. HOMAN asked what the physiologists looked for in these cases. He also wanted to know how the work which the spleen performs was carried on when that organ is removed?

Dr. BAUMGARTEN, replying to Dr. Homan's first question, said that the pictures in these cases had not been uniform. Some of the patients had presented a normal blood picture except for anemia. In others the leukocytes had been very variable. As to how the work of the spleen was carried on, the answer to that depended on the idea of what the work of the spleen was. Very little was known about it.

Dr. MOOK presented a patient (see page 137, this issue) with

Tumor of the Face.

DISCUSSION.

Dr. CANNON had seen four cases of fibroma molluscum. In one case the tumors varied in size from a pinhead up to a hazelnut. The patient had very few on his face. Another patient, a man forty years of age, had them over his entire body, on the hands and on the dorsum of the foot. Only one of these tumors was as large as a small orange. The third patient was the mother of this latter patient; there were one or two on the face and others on the body. The fourth was a man forty-five years old; he had very few of the tumors, mostly on the back, none on the face or scalp. None of these patients had any pain.

Dr. ELBRECHT said that Dr. Grindon had a case which he demonstrated before his classes each year. The patient had several hundreds of these tumors ranging in size from a pea to a peach kernel. Dr. Grindon had removed several of them and they had always returned.

Dr. SINGER said that in one case at the Female Hospital, a post-operative case, the patient had a number of these tumors; they were

rather flat, none larger than a dollar. The patient died of erysipelas. She stated that her mother had had a similar condition.

Dr. MOOK said that according to Recklinghause these tumors were sometimes supposed to grow from the connective tissue of the nerve sheath and some of the cases gave a history of neuralgic pain. He had seen a twelve pound tumor of this character removed from below the scapula, but it returned. This condition had no effect on the general health, except, perhaps, mechanical when the growth was in such a position as to cause obstruction.

Dr. KIRCHNER stated that this tumor had hung down in such a way that it obstructed the air passages and it was a very difficult matter, also, for the patient to eat and sleep. It was taken off principally for these reasons.

Dr. FREUND reported a case (see page 138, this issue) of

Stab Wound of the Abdomen.

DISCUSSION.

Dr. CANNON said that this case was interesting because there was so much of the gut outside of the cavity. Usually when the intestines got outside the clothes it set up such a severe peritonitis that the patient succumbed. He had seen a similar case with his father. The patient, a man, was stabbed in the abdomen, which was laid almost wide open with the knife. He carried his intestines in his hands and ran across the street to a livery stable, where he fell. The intestines were scattered over his clothes and on the floor of the stable. The intestines were washed and put back perfectly clean and the man recovered. This case showed what might be done by careful technic.

Dr. KIRCHNER had hoped to present a case that had come in shortly after this one. It was a very similar case, a prolapse of the intestines, but not so much. There was an incised wound of the intestine which was treated in the usual manner and the patient had left the Hospital. These cases were of great interest to the surgeon. To treat them successfully a certain technic must be instituted. The sooner the surgeon got at these patients the better. It was rather unusual to have these cases where the bowel or omentum was infected, recover. The line of technic was well laid down. The incision in case of stab wound depended upon the location of the wound. In gunshot wounds the median incision was to be preferred. Careful search should

be made for hemorrhage and that controlled, if possible. The presenting loop of intestine should be searched for perforations and, if found, those should be sutured. When the intestine did not seem to be injured it was well in all these cases to make a systematic search for a possible injury, otherwise injuries to the viscera might be overlooked. In the case just referred to, while the protruding loop showed a perforation, there was a second perforation that might easily have been overlooked but for such a search. It was a good rule to begin at the ileocecal valve or at the ligament and examine the whole intestine. It had been the custom in the City Hospital to flush these cases when the injury was recent. In the case of an old injury with a pronounced peritonitis no good ever came of flushing. When the vitality of the peritoneum was intact great good might result from a thorough irrigation. All these cases should be drained and upon the thorough drainage depended the ultimate success of these cases. The drainage that had been used at the City Hospital with good results was the glass tube. This should be used regardless of the location of the wound. Even if the wound were in the stomach, for instance, the tube should be placed in the lower portion of the abdomen through a stab wound. There was sometimes considerable hemorrhage without the symptoms of it. The patient being placed in the Fowler position by means of gravity the cavity was thus drained, through the dependent portion. It was always well to make the laparotomy wound through a supplementary incision. The second case that he had desired to present illustrated this point. Incision was made through a supplementary wound and closed in layers. The original wound was drained. A few days afterward the patient developed a temperature and an abscess developed at the site of the stab wound but the laparotomy wound remained perfectly clean, and the patient made a good recovery. Peritonitis was to be looked for on many of these case and there is then little or no peristalsis. Even when the patients were restless it was, therefore, unwise to give them opium. A better plan was to give the patients laxatives, and salts seemed to serve the purpose best. This patient's pulse and temperature had been exceedingly high, but he was able to retain the salts and as soon as evacuation took place he began to improve. When there was much vomiting it was better to wash the patient's stomach. It gave great relief. As a rule these patients need but little stimulation. The stimulation from

drugs, aside from those used in shock, was of little avail. Physiologic salt solution under the skin gave the best results. Strychnin seemed to make the patients more restless and no good results seemed to accrue.

*Meeting of November 16, 1905 ; Dr. John Green, Jr.,
President, in the Chair.*

Dr. HORACE W. SOPER read a paper (see page 139, this issue) on
Typhoid Perforation.

Dr. FRANCIS REDER presented a specimen of

Intestinal Perforation Due to Trauma,

and said: The paper of the essayist recalled to me this specimen. This man was carried a block beyond his destination one evening in returning home, and in trying to gain time in hurrying back he ran into a post used as a support to a telegraph pole. He reached home about 7:30, p.m. suffering great pain. I saw him about 9 p.m. In making the examination I found an old inguinal hernia on the right side and a new one on the left, also inguinal, about the size of an orange. He complained of much pain about two inches below the umbilicus, radiating over to the left inguinal region. Pulse and temperature were normal, facies indicated shock, yet, the more pronounced symptoms of shock were masked in some way. The patient was perfectly conscious. I reduced the hernia on the left with some little difficulty. The right I did not succeed in reducing. The patient informed me that that rupture was always out. I was not satisfied with his condition and suggested that he allow me to take him to a hospital and open his abdomen as I suspected some damage to the bowel. Consent was not given. I remained with the patient about two hours. Gave no opiates. There was extreme tenderness and marked rigidity of the abdomen, no vomiting. I suggested that another physician be called in to aid me, but consent was not given. In the morning I found the pulse running up to 120, temperature subnormal, and an ashy color to the countenance. Consent to operation was then readily given. I operated and found this perforation (showing specimen). The man died on the fifth day from septic peritonitis. What I censure myself for is

that I was not imperative in demanding an operation at the hour, or the second hour, after I saw him. If the operation had been done then, the man would have had an excellent chance for recovery. He was 63 years old and in the best of health. The perforation was about 60 inches from the ileocecal junction, on the left side. There was no external evidence of any injury but in cutting through the skin and exposing the underlying tissues the extravasation of blood over a circumscribed area (about the size of a quarter) was very marked.

DISCUSSION.

Dr. TAUSSIG said that there were unquestionably very few matters coming up in internal medicine more difficult to judge than typhoid perforation. It was generally recognized that none of the cardinal symptoms of perforation but might be missing and for that reason the diagnosis was sometimes extremely difficult. It was rendered more difficult, too, by the fact that it was possible to have a perforation imperatively demanding operation, in the absence of any symptoms that would enable one to conclusively diagnose perforation, and again there might be an apparently typical symptom complex and no perforation. Dr. Taussig had seen a case similar to the one reported by Dr. Soper. The patient was a young woman, toward the end of the third week, with high pulse and a good deal of meteorism. She was attacked one evening by excruciating abdominal pain, the temperature dropped, the pulse was fast and thready, the abdomen rigid and there was much meteorism; leukocyte count, 9,000. It seemed that here was a case of perforation. Against my better judgment, apparently, I allowed myself to be persuaded against operation. The next morning the pain had ceased entirely, the abdomen was less rigid, the pulse as it had been before the attack, and there was nothing to lead to the belief that perforation was present. Had an operation been done, doubtless no perforation would have been found. During convalescence this patient was attacked by a post typhoid dementia, so that possibly the symptoms might have had a neurotic basis. Whenever a sudden change for the worse occurred, it should be remembered that there was a possibility of perforation, but on the other hand there might be sufficient symptoms to apparently justify operation without there being a perforation.

Dr. BARTLETT agreed that the matter of diagnosis in the perforations occurring in the course of a typhoid fever were of the utmost

difficulty. So distinguished an authority as Dr. Osler stated in one of his last monographs that the only sure evidence was finding the hole. The men at Johns Hopkins who did most of the advance work in this line operated on three of their cases on a false diagnosis. All three of these cases, Dr. Bartlett thought, were operated on by Cushing. They were not typhoid perforation, but in neither of the cases was the result of the operation fatal. In the case referred by Dr. Soper, in which Dr. Bartlett had operated, after the operation he had complimented Dr. Soper on his diagnosis, for he had not felt very sure of a perforation when cutting into that abdomen. Within the the last year or two he had operated on three of these cases. One he had already reported. There was the sudden, typical pain, a drop in the temperature from a 104 to 96.5°, increase in the pulse from 104 to 130 and evidence of intense shock. The patient commenced to vomit and it was a typical case. The abdomen was opened twenty hours after the onset of abdominal symptoms and the perforation found in the ileum a few inches from the ileocecal valve. This man was now perfectly well. There was an extensive low peritonitis. The second case had occurred about a year and half ago. A woman in the fourth week of typhoid suddenly began to present pronounced abdominal symptoms. Dr. Bartlett did not see her till three days later. She had commenced to vomit, there was the characteristic abdominal pain, the abdomen tympanitic. When he saw her the condition had reached such a stage that he was unable to make out anything of the abdominal condition. The patient was simply gurgling out one mouthful after another, without any apparent effort, the usual characteristic of dynamic ileus. For want of a better diagnosis in the face of such conditions the abdomen was opened and no perforation was found, but a peritonitis as far as one could see, with lots of fibrin. There was an immensely distended small bowel due to volvulus of the ileum. The patient improved immediately as soon as the gut was untwisted, but died later of another complication. The third case was the one just reported by Dr. Soper. It was certainly to the advantage of this subject in St. Louis that Dr. Soper's case had been reported, in consideration of the little symptoms there had been on which to make the diagnosis and on the strength of which Dr. Soper had advised operation, perforation being found at the operation. The cases could not be cured without operation. One point on technic; if the patient was bad, without resistance to stand a serious operation, the intestine

should not be resected, nor should there be even an attempt to sew up the wound in the intestine, it should be merely brought to the surface and anchored there. Such patients would not stand more than ten or twelve minutes surgical work. In Dr. Keen's second monograph he said that he had considerable praise for the man who did these operations in thirty minutes, and that of 157 cases he had not known of one that survived an operation of over an hour. These patients must be given the chance of a very short operation, eleven minutes or less was Dr. Bartlett's urgent advice.

Dr. SMITH, felt that the subject of diagnosis in these cases was of paramount importance. This would be appreciated when one considered how early death ensued after this accident, and, therefore, how soon surgical interference must be had in order to have the patient in a state of some resistance. Of a series of tabulated cases, 33.3 per cent died on the first day, 29 per cent on the second and 83.3 during the first week. Hence, if anything was to be accomplished by this operation, not only must the diagnosis be made as early as possible but the interference must be prompt. In the diagnosis, a number of conditions would have to be excluded. Early in this work, and while Dr. Smith was in the City Hospital, he had been greatly impressed by one case that he had seen there. In those days the internes were afraid to admit that they had so much as a pain in the stomach for fear of an abdominal operation. A patient came in suffering with severe abdominal pain and was sent to the surgical ward, and ordered prepared for operation. Dr. Smith had the task of cleaning him up and while doing so the patient began to cough. Upon listening at the chest there was found a very distinct crepitation. The surgeon was notified and after considerable discussion it was decided to wait awhile. The patient developed a typical pneumonia and they saw no more of the abdominal symptoms. Other conditions might produce symptoms simulating typhoid perforation, for instance, thrombosis of the iliac veins. Again, one must be on guard against appendicitis, which might occur in typhoid. Recently a case at the Mullanphy Hospital had illustrated this point very well. A patient in the third week of typhoid developed abdominal symptoms. It was taken at that time to be a disturbance about the the appendix. The patient later developed marked abdominal symptoms which pointed to perforation. During this second exacerbation of the trouble while he had marked and ex-

quisite tenderness and rigidity of the abdomen, he did not have the classical drop in temperature and rise in the pulse. There was no change in either. But after the abdomen was opened up several perforations were found and a focus was found in the ileum, near the ileocecal junction, in which there were old adhesions, and which probably accounted for the first attack. This focus was walled off. As Dr. Taussig had said, the development of a leukocytosis might aid somewhat in the diagnosis. Some recent observation had been made by Briggs in two cases in connection with the blood pressure. In one case where the patient had a rise in the blood pressure, four hours later there developed violent symptoms of perforation and five hours later the perforation was found. The inflammatory process was eight to ten hours old. In the second case case, there were abdominal symptoms and the blood pressure was negative. At operation no perforation or peritonitis was found. This might possibly prove to be another aid to the diagnosis. The subject was a most important one and the Society was certainly under obligations to Dr. Soper for calling the matter to their attention.

Dr. BLISS had seen a case similar to that of Dr. Taussig. This patient was his brother-in law 23 years of age. In the fourth week of the typhoid he was seized with a sudden pain and a chill. The temperature dropped to 97.5°, and pulse rose at the same time. He had a great deal of pain and the facies indicated abdominal trouble. Dr. Bliss had had no doubt at all that perforation had taken place and neither had Dr. Nifong. The patient was kept perfectly quiet, the symptoms subsided within the forty-eight hours, the patient recovered and remained well, though he had all the classical symptoms of a perforation.

Dr. SHARPE hoped that Dr. Reder would state, in closing, what he thought was the age of that perforation. In the specimen it certainly looked older than a few hours. Possibly it might have existed a day or two before the operation.

Dr. Soper's paper was most interesting. It was true that all the classical symptoms of perforation might be absent, yet, the perforation be present, or on the other hand with all classical symptoms present the perforation might not exist. This being admitted, it was not well to severely blame the general practitioner for his failure to diagnose the condition promptly. But when the physician *did* believe that a

perforation was present and failed to promptly call a surgeon in consultation; he was a dangerous man in the community; and the surgeon who, when brought into contact with a perforative case, failed to operate *because he was afraid to*, was an even more dangerous man. If a man had not the courage of his convictions and a reasonable confidence in his ability to do surgical work, he should abandon surgery.

It is now generally recognized that these perforative cases have, without operation, an almost invariably fatal termination. It must also be recognized that all operations to be effective must be made early in the condition, and be of the most rapid character.

Dr. WILSON had seen a case some two weeks previously at the Female Hospital. Patient gave a family history of phthisis, father having died of lung trouble. Patient lived in poor hygienic surroundings and worked in a steam laundry. On entrance to the Hospital, her temperature was 96.4° and pulse 100. She gave symptoms only of general weakness and rheumatism in right knee; evidently there was some inflammation, the knee being tender and 3/4 inch greater in circumference than that of left. Patient was put on tonic treatment and allowed to be up until the morning of the 5th day, when she began to complain of pains over her lower abdomen. She was kept in bed and on examination that evening, found abdomen tense and tender to pressure; no vomiting or nausea but temperature 101°. The only signs of peritonitis being rigidity of abdominal wall, temperature and tenderness. Consultation was held with Dr. Elbrecht and corps; peritonitis being diagnosed, it was decided to operate early the following morning. Patient was then prepared for operation and given the usual 2-ounce magnesium sulphate, but she died about 4 a.m. that morning. The question arose whether this was an ambulatory typhoid or a tubercular perforation.

At autopsy the peritoneum and intestines were congested and covered with plastic membrane. There were many ulcers along intestines and several perforations in ileum. Microscopical examination of the ulcers showed tubercle bacilli. The magnesium sulphate may have increased peristalsis so as to empty the intestinal contents into peritoneal cavity and thus hastened death.

Dr. DEUTSCH wished to voice the sentiment of Dr. Bartlett in regard to the necessity for rapid work in these cases, and he added that these operations should not be attempted under general anesthesia

when possible to avoid it. Local anesthesia was preferable. Nine out of ten deaths in this class of cases were due to the anesthesia. Neither should these operations be used as technical displays. There should be enough work done to accomplish the purpose of saving life. The internist was responsible for the death of these patients when he failed to recommend operation in the presence of symptoms of perforation. The prognosis without operation was very poor, it was the internist's duty, therefore, to advise operation in such cases.

Dr. RAVOLD had never seen a typhoid perforation, but it was a most interesting question. Suppose the internist had come to the conclusion that a patient had a perforation, what should he do, have the surgeon operate, or wait? The literature and statistics replied that the operation be done quickly. But suppose that the perforation was not found, what harm had been done to that patient? Were there any statistics on this point. Another thing, what were the cardinal symptoms of this perforation?

The PRESIDENT thought Dr. Bartlett had answered one of Dr. Ravold's questions. The three cases operated upon at the Johns Hopkins Hospital had recovered, though no perforation had been found.

Dr. REDER said that in view of the prevalence of typhoid and the frequency with which perforation occurred (one in every four cases), it was the duty of the physician to follow up these cases until the patients were well. One of his own patients had had a perforation when he was practically well, (in the sixth week). He had seen the man about half an hour after the perforation had occurred. Operation was not permitted and the man died forty hours later. The autopsy showed perforation about five inches from the ileocecal junction. In another case, presumably perforation, Dr. Reder failed to find the perforation. Conditions did not permit of more than the exploring with the finger of the iliac fossæ. The adhesions that had formed to the abdominal parietes were so extensive that it would have been dangerous to make further search. The abdominal cavity was dry, the intestines were all agglutinated together and distended, they appeared transparent. In this case the operative intervention had no effect upon the patient's condition, *i.e.*, it did not hasten death; the condition was about the same after the operation as it was before. In another case, that of a girl, aged 14 years, he had found the perforation after much difficulty.

After brushing away a large piece of lymph he found three cribriform perforations. He simply attached the perforated intestine to the abdominal wall and allowed a fistula to form. This was five months ago. The girl is well but still had the fistula. It was sometimes impossible to make a differential diagnosis between typhoid fever and appendicitis. As to the surgical intervention in these cases of typhoid perforation it should be borne in mind that a patient with a perforation still has to fight the battle against the fever for some weeks to come. The least amount of surgery in the shortest time possible will give such a patient the best chance for recovery.

In closing, Dr. Reder, replying to Dr. Sharpe stated that the age of the perforation could not be in doubt. It had occurred about 7:30 o'clock, he had seen the man about 9 o'clock and had operated the next day at 8 o'clock. The operation disclosed a septic peritonitis, the abdominal cavity was full of a flocculent, yellow matter with a fecal odor. The patient had been a strong wine drinker and the stimulation caused by this had probably been sufficient to mask the symptoms of shock.

Dr. SOPER, in closing, said that it had been clearly established by writers on this subject that the cardinal symptoms were sudden pain, localized tenderness and rigidity of the muscles, Keen and Richard Hart, of Philadelphia, had emphasized particularly that the rigidity must be involuntary. Hart stated that with this set of symptoms,—onset of sudden pain and localized tenderness and rigidity of the abdominal muscles—in a typhoid patient, operation was indicated. Dr. Soper believed this was the position taken by most of the surgeons who had done this kind of work. In looking over a large number of case reports the speaker had been impressed by the frequency with which chill occurred. It was certainly a danger signal and should lead the physician to watch for something to develop. Replying to a question by Dr. Ravold, Dr. Soper stated the experiments by Dr. Briggs were very recent and he believed that as yet that method had not been carried out by others.

Dr. F. J. TAUSSIG read a paper (see page 144, this issue) on the
Cause and Prevention of Post-Operative Cystitis.

DISCUSSION.

Dr. EHRENFEST said that it was well-known that Dr. Taussig had published on this subject several papers recognized extensively

in German and American literature. One point undoubtedly interesting was his belief that it was not so much the retention as the injury which was responsible for the cystitis. The speaker, for obvious reasons, is especially interested in retention of urine after childbirth. Possibly in the majority of these cases the retention in his opinion was due to the interference with the innervation, the fetal head pressing the nerves against the bones of the pelvis. Dr. Ehrenfest had had two cases of this kind within the past year, both patients being the wives of physicians. One patient was catheterized for seventeen days, the other for thirteen days, about four times each day. In neither case did the slightest trace of a cystitis develop. In these cases there was no injury and good care was taken in the catheterization and possibly but few bacteria were carried into the bladder. He had tried the glycerine injections several times in cases of retention with satisfactory results. Dr. Taussig had brought out the point that cystitis could be almost positively avoided if the bladder was washed out at each catheterization. In this connection Dr. Ehrenfest demonstrated a simple device of his own that he is using for washing out the bladder. It consists of a medicine bottle into which fits a rubber stopper with two holes. Through the one air is pumped by means of a rubber balloon into the bottle, through the other a rubber tube is pushed, through which the fluid is conveyed into the bladder. By the interpolation of 3 way-stop-cock, the fluid can be directed either from bottle to bladder, or from bladder to waste jar or from bottle to waste jar. This apparatus enables one to wash out the bladder in a simple manner without the help of an assistant under reliably aseptic conditions. This apparatus has the advantage over both the typical bladder syringe and the fountain syringe, that it is cheap, can not get out of order, can be boiled and permits one to accurately measure the amount of fluid injected into the bladder. It certainly is an ideal apparatus to combine catheterization with washing of the bladder as a routine procedure.

Dr. RAVOLD thought there were two points here of especial value, this condition might arise: 1, When there was injury to the blood supply of the bladder, 2, when there was injury to the mucous lining of the bladder, thus permitting bacteria to develop in the urine. Dr. Taussig had emphasized that the bacteria came in from below but bacteria, especially the colop bacillus, might come in from the kidney,

as in typhoid fever, so also in these cases where the bowels had been constipated the organism might pass down through the ureters and infect the urine.

Dr. JACOBSON urged that the nurses be watched after operation, otherwise they might use vaseline on the catheter, etc.; of course, vaseline should be discarded. It had been found by experiment that the proteus vulgaris which developed when there was retention of urine, would produce a cystitis. There was a difference of opinion as to the cause of cystitis, but the consensus of opinion was that retention was a most decided factor, causing changes in the urine. He thought Dr. Ehrenfest was mistaken in his belief that the pressure of the child's head upon the nerves was in any way responsible for cystitis. It was probably partly due to the shock transmitted to the urinary nerve centers, and possibly the chilling of the surface might have something to do with the tendency to retention of the urine. One investigator had made a cystoscopic examination of the bladder in 663 cases of so-called irritable bladder. There were but two of these in which there was not a hyperemia of the trigone and a beginning cystitis. As to the means of entrance of the bacteria, the colon bacillus might pass directly from the rectum to the bladder through the bloodvessels and lymphatics. The proteus vulgaris has frequently been found in the vagina and urethra and then may travel to the bladder or be conveyed there by the catheter.

Dr. TAUSSIG had had the privilege of working up bacteriologically a case of cystitis for Dr. F. J. Taussig, a case which illustrated the fact that the bacteria might pass directly from the rectum to the bladder. The patient was a negro woman upon whom a severe operation had been performed and the urine contained not only pus but gas. Every time the urine was catheterized the bacillus lactis aerogenes was demonstrated, a bacillus probably more or less related to the colon bacillus, and usually found in the stools of people fed chiefly upon milk. In culture with the colon bacillus this organism produced carbon dioxide. In this case the patient was catheterized in the Hospital, by the nurses, and there was no reason to suppose it was carried in by the catheter.

Dr. CROSSEN considered post-operative cystitis a most interesting condition, not only those cases following severe operations but those occurring where the operation did not touch the bladder at all. There

were so many points to be considered that he could touch upon only some of the more important ones. In the preparation of a patient for abdominal section it was a good idea to saturate the patient with water. In his own work this was a routine measure. The patient should be directed to drink as much as possible every twenty or thirty minutes, and it was surprising how much they could drink and it was also surprising how much it increased urinary secretion. He believed that it helped the kidney action after the strain of severe operations. In operations where it was expected to denude the surface of the bladder, it was wise to give some urinary antiseptic some days before the operation. This would to a certain extent tend to prevent the cystitis. After operation it was impossible to emphasize too strongly the danger of infection of the bladder. The nurse should be instructed not to catheterize the bladder if possible to avoid it without too much distention of the bladder. Some patients could go a much longer time without catheterization than others. In the case of patients who had taken a great deal of water, the bladder filled up quickly, and it seemed to him that this rapid filling of the bladder with comparatively normal urine aided spontaneous urination. Propping the patient up considerably to aid urination was less dangerous than invading the bladder with the catheter, even with the most rigid asepsis. Another point that could not be emphasized too much was the irrigation of the bladder after each catheterization, for it prevented the rapid accumulation of bacteria. It was difficult to establish that the urinary antiseptics in use helped to bring on spontaneous urination, yet, he believed that they did and when he at all suspected that such trouble might occur, he employed such medication. It was certainly unwise to say that such medication did not have this effect until there was more evidence to prove the assertion. There were cases where there had been little injury and which did not yield to minor measures, such as propping the patient up in bed, and external irrigations with warm solution, and there seemed to be no reason why there was not spontaneous urination. There might be no appreciable cystitis. In such cases certain irritating injections were sometimes of avail, such as boroglycerin, and injections of silver nitrate. He had used the boroglycerin in two cases close together, in one with good results, in the other with apparently no effect. In another case, lasting twelve or thirteen days the injection of silver nitrate solution brought on spontaneous urination. The handling of such cases was still in the experimental stage, and as far as the speaker

knew, no entirely successful method of caring for them had yet been devised.

Dr. JACOBSON referred to a case that had a bearing on Dr. Crossen's remarks. The patient after a hysterectomy in which there was no injury to the bladder, developed cystitis. For about three weeks catheterization was necessary. After she had recovered perfectly from the hysterectomy; every time she became ill from any trouble, for example, shock from news of her sister's death, result of accident, she had a retention of urine for two weeks, and in every examination of this retained urine Dr. Jacobson had found the colon bacillus. There was a neurotic element in nearly all these cases of cystitis following operation of any kind in the abdominal region. General tonics had a very good effect.

Dr. TAUSSIG, in closing, said that he thought Dr. Ehrenfest had given them another demonstration of his mechanical ingenuity and as his device seemed both simple and practical, the speaker intended to try it. As to the possibility of infection from above, he had simply omitted from lack of time, to refer to any of these cases; they are very rare. The result of animal experimentation had been varied. Some experimenters had gotten the renal infection by causing a stagnation of the urine and feces. From animal experimentations no definite or satisfactory conclusions could yet be drawn, for there had been practically very little evidence. In patients confined to bed for some time the colon bacillus is found in the urethra. This was not due to any negligence on the part of the nurse but the multiplication of bacteria in this region, consequently if the bacillus lactis aerogenes happened to be in the stools it was not surprising to find them in the urine. In regard to negligence in catheterization, Dr. Taussig believed that it was necessary to be very careful, yet, that factor should not be overestimated. A glass catheter could be very easily sterilized and a nurse must be very dirty indeed if she could not insert that catheter without carrying in with it a quantity of bacteria. The surgeon should not be too prone to blame his nurse with the post-operative cystitis.

*Meeting of December 7, 1905; Dr. John Green, Jr.,
President, in the Chair.*

Dr. J. J. SINGER read a paper (see page 160, this issue) on

Cerebellar Tumor of Syphilitic Origin.

DISCUSSION.

Dr. CAMPBELL had seen this patient before and could testify to the benefit following the administration of the iodid. This patient was certainly very much better than when he had seen her some four weeks before. The case practically illustrated the good the iodid did in conditions of this kind. It was probable that there was a cerebellar disturbance but it was also probable that she had cerebral syphilis and, probably, some meningitis along with it. It was difficult to ascribe all the lesions to one point, for syphilis of the brain was so apt to affect many parts at the same time. The disease had to be treated continually or repeatedly and the symptoms would often yield whenever the treatment was instituted.

Dr. BRADY said that the only remedy which would prevent the formation of connective tissue was mercury and he would use that first, last and all the time.

Dr. GRAVES felt it would be difficult to say at the present time just what the conditions had been one and a half years ago. At present the patient did not present symptoms of cerebellar disturbance. It was always difficult to localize the process in syphilis of the nervous system. From the fact that there had been no return of the symptoms, it seemed probable that the condition had been diffuse. What was striking was the fact that there had been absolutely an absence of all cranial nerve symptoms. The left pupil was characteristic of the syphilitic process. The absence of its light reflex was the only evidence of the involvement of the nervous system. The Argyle-Robertson or even sluggish reactions were at times the only symptoms of lues cerebri. If the patient had the Babinski sign it would imply the involvement of the pyramidal tracts. The symptoms which the patient had presented, he believed, were due more to a diffuse cortical or rather arterial involvement than to a localization of the process at the base of the brain.

Dr. SINGER, in closing, said that the case was reported more to

show the effects of the iodid on the disease than with reference to the diagnosis. In regard to the mercury, the patient had seemed to do so well that it did not seem advisable to give the mercury until the small mass was found on the tibia.

Drs. HAMILTON and WRIGHT demonstrated

The Riva-Rocci Sphygmotonometer.

DISCUSSION.

Dr. ELBRECHT said that so far as they had been able to learn from clinical results, the instrument was nothing more than a medical toy. They had tested these instruments on a great many cases but they could draw but few conclusions. Little had been written on the subject and they wanted to learn what had been gathered on the subject by those who had been elsewhere and seen its use. So far, the instrument had proved of little practical value in diagnosis in the Hospital.

Dr. BEHRENS had seen the Riva Rocci and one other instrument of the same class demonstrated while in Vienna during the past summer. It was being used a good deal in the wards of both Wausser and Nothnagel over there. The instrument is hardly a toy. The tactile sense is very uncertain, and by the use of this instrument one can tell exactly how the heart muscle is working. In nephritics the high arterial tension would be shown by the high condition of the column of mercury. Arteriosclerosis would give a pressure above the normal. One might feel the pulse one day and then again a few days later and it would scarcely indicate to the physician the work the heart was doing. Of course, the Riva-Rocci instrument was difficult to carry from patient to patient and the application was a little difficult. Dr. Behrens had brought home with him the Garstner tonometer. This is an instrument that can be carried from case to case and is easy of application. The normal pressure varied between 90 and 120. It depended upon the contraction of the left side of the heart. As the sphygmograph showed the pulse wave, this instrument demonstrated the definite amount of pressure. In aortic regurgitation, for instance, the column might rise to 190, but after rest and treatment to ease the condition of the heart the reading would be much reduced and might go down to 160 or even 140, whereas the pulse would seem little

changed upon feeling it from day to day. The object of the instrument was to give an idea of the cardiac and arterial integrity and to thus aid in diagnosis.

Dr. ELBRECHT thought that the difference of 20 points or so did not make much difference from a clinical standpoint. One of these patients had aortic regurgitation (there was no doubt about that for they had seen it at autopsy), and the reading varied from 160 to 118, the patient being under treatment constantly until she died. One point of interest was the increase of blood pressure during labor pains, for physiologists had always claimed this, but the instrument proves it. In labor pains the pressure was materially increased, which demonstrates the old adage that this is a safe time to administer chloroform, for if there was any anemia of the brain the next pain was likely to congest it. The pressure here jumped from 118 to 140. That fluctuation would also be shown by running up a flight of steps, but this depends much on the strength of heart muscle. Clinical experiments, if carried out by different workers and put on record, would be not only interesting but valuable, and much more work must be done with the instrument before it can be depended upon to aid in diagnosis.

Dr. SHATTINGER said that the criticisms made on this instrument were of the same nature as those that had been made upon the sphygmograph. The value of this instrument as of the sphygmograph, depended upon the interpretation. Correctly interpreted the information afforded by this instrument meant a great deal, otherwise it meant nothing. Some one had said that running up stairs would make a difference of twenty points. This only showed how delicate was the vasomotor mechanism. It proved that experiments must be made under like conditions. In a heart case, take the blood pressure, then have the patient run up stairs and take it again. Treat the patient and a week later take the pressure again under like conditions, and learn whether the patient could now bear running up stairs better than he could a week earlier. In estimating the blood pressure one was dealing with two factors, the heart was one factor and the capillaries was the other. There might be a more powerful heart action and instead of an increased blood pressure that might be completely counterbalanced by the dilated capillaries. In that case this instrument would not show an increased blood pressure though the heart was beating

strongly. This instrument was of great aid in properly administering the carbonated baths for heart disease. It would show whether the bath did good or harm; it would indicate whether the bath was having the desired effect, the dilatation of the capillaries doing away with the peripheral resistance. If the instrument showed this, it would indicate that the patient was reacting and that he was being benefited by the bath. It was necessary to reason from the figures.

Dr. RAVOLD had seen this instrument used constantly by Mueller, of Breslau, and Coburg, in Berlin, but they had never given Dr. Ravold the records. He asked them why they did not give him these records and they had explained that it was only after one had made many hundreds of observations by mean of this instrument that the records could be of value. For this reason they had not been ready to turn over the results to a beginner like himself.

Dr. WRIGHT stated that the Dickerson case had an uncompensated mitral and aortic regurgitation. The patient was in bed and the arm was always on a level with the heart, and the pressure was taken always at about the same time of the day. There was a gradually increased blood pressure from 130 to 158 the day before the patient died. In many of the other cases the patient usually had the arm on a level with the heart and under practically similar conditions.

Dr. MEISENBACH called attention to the statement made that as the heart became compensated in a case of valvular lesion with incompensation the blood pressure fell. The cardiac muscle was one thing and the condition it worked against was another. Normally, there was a balance of these two things, *i.e.*, vasomotor condition and cardiac force. There could be a low pressure as well as a high pressure with a strong heart, which would be dependant on the vasomotor condition. A certain amount of cardiac force was necessary to keep up the volume against the resistance. The speaker could not agree with the observation noted. Incompensation due to a valvular lesion alone, does not produce increased vascular tension in the peripheral arteries, but the reverse takes place, as soon as the heart fails to drive its given quantum of blood into the arterial system. As the heart regains its vigor, the tension rises as is evidenced by increased diuresis and disappearance of edema. A fall of tension as the compensation returned in this case can be explained only by the leaving off of drugs or elimination of toxic substances which were acting on

the vasoconstrictor system at the time the observations were made, and not by the return of cardiac force. Cook's modification of the Riva-Rocci instrument has a little wider cuff and a jointed manometer tube, the Janeway instrument has a U-shaped tube, and there are similar instruments by Kaplan and Hamilton, and another, the name of which the speaker could not recall, (Erlanger's) and there was also that of Stanton. It is a question whether the increased blood pressure in the period of delivery reported was due to the excitement alone or to the vasoconstrictor condition resulting from some metabolic change incident to the act of parturition. A question of interest is what those observations would be if made under chloroform anesthesia. As to the value of blood pressure estimation the observations had been so varied and were given with such caution, it was difficult to discuss them, but it is true that there were conditions under which one might expect to find and did find an increased blood pressure and vice versa and the estimation of the blood pressure was often essential to diagnosis and treatment. The trouble lies chiefly in trying to make a diagnosis from this one symptom alone.

Dr. TUTTLE had had no experience with the sphygmometer but he had "played" with the sphygmograph. One of the things that had prejudiced him against the sphygmograph was the fact that it might be placed on a man's wrist and a tracing made, the instrument removed, and then replaced, and another tracing made and the result would not be the same, nor had he ever seen any two tracings taken by different persons that were alike.

Dr. ELBRECHT replied that this depended upon the sensibility of touch. One man could sometimes feel a pulse when another man could not. This instrument was the modification by Cook and was considered the most sensitive of them all. Sahli, in his new book, had slighted Janeway's instrument altogether.

Dr. BEHRENS replied that if the tactile sense was insufficient the visual sense could be relied upon. The ring should be applied over the third finger. After the circulation had been shut off from the finger the pressure was slowly released. With this instrument if one could not feel at least he could see. The tactile sense varied, and it was the same with the sphygmograph.

Dr. H. W. MOOK demonstrated

The Spirocheta Pallida.

The *spirocheta pallida*, the organism of syphilis, was discovered by Schaudinn-Hoffmann in Berlin last May. It was found in 8 cases, according to their first paper, in the juice from the inguinal glands, and in the initial lesions. Later they found it in the blood of an infant, drawn from the spleen two days before the infant broke out with roseola, showing that it is probably carried by the blood stream. A few have doubted that the *spirocheta pallida* is the causative agent in syphilis, but most observers have found it only in syphilitic lesions. Associated with it and found in lesions syphilitic and non-syphilitic is the *spirocheta refringens*. The *spirocheta refringens* takes the stain very deeply, while the *spirocheta pallida* takes it faintly and is not easily seen unless numerous. Mechnikoff found it in four out of the six syphilitic monkeys. An English surgeon named Gordon drew the spinal fluid in eight cases of tabes with an undoubted history of syphilis. The results were negative in every case. The specimens I have to show here were fixed for ten minutes in absolute alcohol and stained with Giemsa's solution (diluted 1 to 15), for one hour. The smears were made from moist papules in an untreated case of secondary syphilis.

Dr. BARR presented a case showing

Extensive Skin Graft for a 10-Year-Old Burn.**DISCUSSION.**

Dr. ELBRECHT said that in this case the granulation extended from below the knee to above the hip. The odor was very offensive, and the green pus bacillus was found. The leg looked half its original size after the morbid tissue had been curetted off. The granulations were from two to two and a half inches thick. This case simply showed that in all these old cases it was worth while to try a skin graft. Only a few islands remained that needed covering and but one sinus that had not closed, in spite of all methods of treatment.

Dr. BARR presented a case of

Miliary Tuberculosis.**DISCUSSION.**

The PRESIDENT said that he had examined the fundus of this patient's eyes to determine whether there were any tubercles in the choroid, with negative results. In the differential diagnosis between miliary tuberculosis and typhoid it was of importance to have the eye ground examined, for in fully one third of cases of miliary tuberculosis tubercles could be found in the choroid.

REPORTS ON PROGRESS.

SURGERY.

In Charge of M. G. GORIN, M.D.

Circumcision.

After circumcision it is important to prevent adhesion of the reflected mucous fold of the prepuce to the corona glandis by the daily passage of a probe about the corona, and by the use of vaselin.

The Diagnosis and Treatment of Fracture of the Carpal Scaphoid, and Dislocation of the Semilunar Bone.

At the close of a comprehensive article on this subject giving in detail report of thirty cases, Codman and Chase present the following conclusions :

1. "Sprains" of the wrist which do not promptly recover are in many cases fractures or dislocations of the carpal bones.
2. The large majority of such carpal injuries are either simple fractures of the scaphoid or anterior dislocations of the semilunar bone.
3. These two injuries are frequently combined, and in such cases the proximal fragment of the scaphoid is usually dislocated forward with the semilunar.
4. Simple fractures of the scaphoid give a definite clinical picture, and may be recognized by the association of the following symptoms, even without the x-ray, viz.: *A*, the history of a fall on the extended hand; *B*, localized swelling in the radial half of the wrist joint; *C*, acute tenderness in the anatomical snuff box when the hand is adducted; *D*, limitation of extension by muscular spasm, the overcoming of which by force causes unbearable pain.
5. A broken scaphoid has little power of repair and appears capable of but slight callous formation.
6. Fractures of the scaphoid which remain untreated or are treated by massage and active and passive motion, generally, if not

always, remain ununited, and the original symptoms often persist for years with only slightly abated intensity.

7. Cases of fracture of the scaphoid may unite if motion of the wrist is prevented during the first four weeks after, but if by this time no union has occurred, future union is unlikely.

8. Excision of the proximal half of a fractured scaphoid gives a somewhat better result than conservative treatment.

9. A posterior incision to the outer side of the tendons of the extensor communis digitorum gives an easy and safe access to the proximal half of the scaphoid.

10. Passive motion of the wrist joint and active motion of the fingers should be begun within a week after this operation.

11. The possibility of the existence of a bipartite scaphoid should be considered in interpreting x rays of simple fractures of the scaphoid, but its occurrence is very rare in comparison with fracture.

12. Anterior dislocation of the semilunar bone should be recognized clinically, even without the x rays, by associating the following symptoms, viz.: *A*, the history of an injury of considerable violence to the extended or twisted wrist; *b*, a silver fork deformity, the posterior prominence of which corresponds to the head of the os magnum, and between which and the lower end of the radius is found a groove which represents the position formerly occupied by the now anteriorly dislocated semilunar; *c*, a tumor under the flexor tendons of the wrist just anterior to the lower end of the radius; *d*, a shortened appearance of the palm as compared with the other hand; *e*, stiffness of the partially flexed finger motion of which, either active or passive, is painful; *f*, the persistence of the normal relation of the styloid processes of the ulna and radius and the existence of shortening of the distance from the radial styloid to the base of the first metacarpal.

13. Recent dislocations of the semilunar may be reduced with good result even after the fifth week by hyperextension followed by hyperflexion over the thumbs of an assistant held firmly in the flexure of the wrist on the semilunar.

14. Irreducible dislocations demand excision of the semilunar and the whole or portion of the scaphoid if there is a coincident fracture of the latter.

BOOK REVIEWS.

Culbreth's Materia Medica.

A Manual of Materia Medica and Pharmacology for students and practitioners of medicine and pharmacy. Comprising all organic and inorganic drugs which are and have been official in the United States Pharmacopeia, together with important allied species and useful synthetics. By David M. R. Culbreth, Ph.G., M.D., professor of botany, materia medica and pharmacology in the University of Maryland. Fourth edition, revised to accord with the new U. S. Pharmacopeia, 8th decennial revision. Octavo, 976 pages, 487 illustrations. Cloth, \$4.75. n.t. Lea Brothers & Co., Philadelphia and New York.

This splendid work is what the title indicates, a description of the Materia Medica and Therapeutics, and is a fundamental study. Pharmacology also receives due consideration, although from the great number of subjects involved the latter must of necessity be brief. The subject matter is very concise and yet sufficiently clear to satisfy the student and practitioner.

The work opens with some general considerations regarding pharmacy, classification of drugs and therapeutics. The botanical classification of plants will commend itself to all earnest students of science. As might be expected the drugs from the vegetable kingdom take up the most space. The list of organic drugs from the animal kingdom is fairly complete.

The animal kingdom, as is well known, furnishes many valuable drugs. The carbon compounds used in medicine are all described and their structural formula added to a description of their physical properties.

The appendix treats of poisons and their antidotes, dose tables of unofficial drugs, etc.

The edition has been thoroughly revised. The work is really encyclopedic in scope, it is remarkable what a complete list of drugs has been discussed.

Surgical Diagnosis.

A Manual for Students and Practitioners. By A. A. Berg, M.D., adjunct attending surgeon to the Mt. Sinai Hospital of New York. Illustrated with 215 engravings and 21 plates. Lea Brothers & Co., Philadelphia and New York.

The reviewer has been much impressed with this compact little volume of 54 chapters. The author presents the subject in a very interesting and at the same time compact manner; the main features of each affection are carefully described. The student will find the volume a handy reference book, and the busy general practitioner will derive much benefit from it. The illustrations are good, many of them having been taken from standard works on surgery. It is more than probable that the student will find the book of more value than any one else. The author has succeeded in presenting a compilation of important facts in a thorough and interesting manner.

The paper is of good quality, the type large and clear, the illustrations good and the general appearance of the book is a credit to the publishers.

Ophthalmic Neuromyology.

A Study of the Normal and Abnormal Actions of the Ocular Muscles from the Brain Side of the Question. By G. C. Savage, M.D., Professor of ophthalmology in the Medical Department of Vanderbilt University, Nashville, Tenn.; author of "New Truths in Ophthalmology," and "Ophthalmic Myology." Ex-President of the Tennessee State Medical Association. With 39 full page plates and 12 illustrative figures. Published by the author, 137 Eighth avenue, North Nashville, Tenn.

In this volume Dr. Savage has presented to the profession a study of the actions of the ocular muscles which makes this ordinarily difficult subject easy and attractive. He intends the book to be a companion volume to "Ophthalmic Myology," which he published several years ago, and no word of which, he says, needs be changed in the light of this newer study.

The study of this subject is based on the hypothesis that there are nine conjugate brain centers, each acting on two muscles, one belonging to the right and the other to the left; and twelve basal centers, each of which acts only on one muscle. The conjugate centers are located in the cerebral cortex and control the associated movements of the eyes, acting alike on normal and abnormal eyes, and are under the control of the will. They are in no way responsible for heterophoria and can in no way prevent it.

The basal centers are located beneath the aqueduct of Sylvius and in the floor of the fourth ventricle. Their work, under the guidance of the fusion faculty, is to prevent diplopia. If there is no ametropia or heterophoria these centers are always at rest; but, on the other hand, in certain kinds of heterophoria some of these centers are never at rest while the eyes are open, and on this account these forms of muscle-unbalance cause so much trouble.

The author bases this study on pathology and physiology, rather than on anatomy and histology, and says: "If the above hypothesis accounts for every phenomenon connected with the normal and abnormal actions of the ocular muscles, as it seems to do, then it ceases to be an hypothesis and becomes a scientific fact.

It is a volume which must interest every physician who in any way tries to realize the symptoms that arise from the abnormal conditions of which it treats.

The New U. S. Pharmacopeia

Makes many changes in the strength of drugs and preparations, reducing some and increasing others as much as double. The law recognizes the current United States Pharmacopeia as the standard. To avoid accidents and damage suits on the one hand, and puzzling lack of results on the other, both the druggist and doctor must follow the same standard. As a convenient pocket reminder of these changes, the importance of which must be at once obvious to every physician and pharmacist, Messrs. Lea Brothers & Co., the Medical Publishers, of 706 Sansom street, Philadelphia, and 111 Fifth avenue, New York, have issued for free distribution a carefully prepared leaflet giving an alphabetical list of the important changes. The strength of each preparation listed is given as in both the old and new U.S.P.

To aid in preventing untoward or negative results in the use of powerful drugs this leaflet will prove handy and valuable.

A postal card request will bring a copy to any physician, druggist, student or nurse.

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EDITORIAL COMMENT.

OVEREATING.

Every now and then some physiologist or clinician reasserts the old theory that one half of the human ills are caused by the ingestion of excessive quantities of food. Crittenden's recent experiments certainly leave nothing to be desired in the way of clearness as far as the scientific aspects of the subject are concerned. On the other hand, Folin declares that there is no sufficient evidence to assume that the proteids in the standard dietaries are necessarily detrimental.

Again, the directions for increasing the nutrition of the patient in a variety of infectious and functional diseases, by forcible feeding, are found in all text-books on therapeutics with almost painful regularity. Is it not a rational sequence that the practitioner can not give explicit dietary directions? On the one hand, certain functional diseases are etiologically related to excessive eating; on the other, we are told that the question of therapy is mainly one of nutrition. Hence, the man at the bedside is sometimes puzzled, whether to starve or overfeed.

Digestion and Feeding.

There is one law, however, to which there are no exceptions, namely, that good nutrition must first depend on good digestion. Whenever any food disagrees, that is, causes flatulency, vomiting or diarrhea, then it must be changed or at least diminished in quantity. We are beginning to learn that the tympanites and diarrhea of typhoid

fever are best treated, not by turpentine and intestinal antiseptics, but by the withdrawal of milk and the substitution of gruels and broths.

The occurrence of acute abdominal distension in pneumonia is often disastrous and may almost always be attributed to irrational feeding as to quality or quantity. The terrible persistent diarrhea of dysentery is generally increased by too much food. In chronic Bright's disease an excess of food, especially of the indigestible variety, often leads to an early death from overdistension of the intestine.

Hence, it is better to feed too little in many diseases in which a good nutrition is of primary therapeutic importance, than to add a diseased alimentary canal to the morbid process. It is certainly a mistake to feed a sick patient on food which he could not tolerate in health. A careful adjustment of the diet to the enfeebled digestion of the sick necessitates care and skill on the part of the attending physician.

Feeding in Children.

In spite of the uncertainties in experimental dietetics, in certain departments of practice, most brilliant results are obtained by the skillful adjustment of foods to the need of the organism. In a recent address on "The Therapeutic Outlook in Pediatrics," by L. Emmett Holt (*Medical News*, December 23, 1905), the tendency to substitute dietary and hygienic regulations for drugs in the treatment of children is forcibly portrayed by the rehearsal of experiences. He claims that the newer therapy has little use for chemicals in the treatment. "The necessity of treating disorders of digestion in infants by changes in food rather than by medicines is not sufficiently appreciated" by the medical profession.

In the acute and chronic diseases of the alimentary canal, the food adjustment is the necessary part of treatment, all other measures, except hygienic means, are really immaterial.

In the acute infectious diseases the really vital things are to put the body under the best possible conditions for natural resistance. Pure air, proper feeding and proper rest are the essential features of the treatment.

In chorea and other nervous disorders a hygienic régime stands above the potency of Fowler's solution. Convulsive seizures in infants are most frequently caused by faulty nutrition. The diagnosis may not always be clear, but the therapeutic indication is generally

very definite, viz , to consider the nutritive condition as the essential one until some new light appears.

In the chronic malnutrition of older children it is often a mistake to give rich foods, cream, potatoes, rice and bread—to use forcible means of feeding; skimmed milk may be better and lead to better results.

Diet in Tuberculosis.

Even the practice of overfeeding in tuberculosis has recently received a chilling reception from the hands of the great American physiologist, Prof. Chittenden. "Who can tell with any degree of precision the exact effects of proteid food upon the function of the liver and kidneys, the effect of an accumulation of nitrogenous waste-products on the system?" * * * "In tuberculosis, while all recognize the importance of fresh air, there appears to be much uncertainty as to the character and extent of the diet best adapted for combating this disease." He thought a reaction against the prevalent fashion of overfeeding in this disease was noticeable.

Could not more be learned by studying the minimum requirements of the individual? "Does not excess of food, for which the body has no true physiological need, in the long run imperil the health of the individual, diminish the ordinary powers of resistance, and so pave the way for various forms of disturbed nutrition which we speak of as disease?"

Minimal Feeding.

We hear much at present on the feeding of minimal quantities. This subject was at first raised to clinical importance in pediatrics, especially by Biedert. The truth was finally driven home that many infants suffering from nutritive disorders do best on a minimal alimentation. This same concept is drifting into general medicine, namely, it is safer to supply the physiological needs of the organism completely and give little or no excess of food, than to treat malnutrition by the indiscriminate ingestion of foods having a high caloric value. Especially with proteids it is wise to be cautious. A minimum proteid quantity in the daily alimentation is more liable to produce well being. A small quantity of food well digested and thoroughly applied to the physiologic needs, with the least disturbance of the organs of excretion is probably more strengthening than large quantities of proteids indiscriminately administered.

Meats or Vegetables.

The standard dietary in tuberculosis is proteid food in full quantities. We have been directed to insist on the ingestion of six to eight eggs a day with a quart or more of rich milk. Butter and cod liver oil are prescribed in addition, until the patient's digestion and metabolism goes all to pieces.

In the Russell Treatment, for example, purgatives are recommended to avoid indigestion and carry off the excess of food. Would it not be more rational to give the amount that can be properly appropriated and leave the purgations out?

It has also been demonstrated that vegetable juices stimulate the absorption of proteids or aid the absorption of proteids. A varied diet, then, is necessary even in tuberculosis but in all cases a most careful adjustment to individual needs and the powers of digestion and absorption must be obtained. Symptoms of indigestion indicate an excess of food or a faulty diet—it must be corrected. Feed the tuberculous patient with the same care as the infant suffering from malnutrition.

External Applications in Internal Diseases.

Every now and then some scientist ridicules the therapeutic value of external applications to the chest in diseases of the bronchial tubes or lungs, or to applications to the abdomen in intestinal and peritoneal inflammations, but little good it does; the embrocations, emollients and cataplasms are as popular as ever. What if their use is entirely empirical! So much worse for experimental medicine, in that it has not determined their exact mode of action. Who has not observed a persistent cough relieved by the application of some oil to the chest? How many patients have expressed their gratitude for a poultice to the chest?

These applications do good, and the only question is what to use. Here science has not as yet served us, although empirical pharmacy has made strenuous efforts to supply the want. The Pharmacopeia furnishes quite a number of plasters and liniments which are used with success externally. We know of a number of patients who have been grateful for a prescription of chloroform liniment.

The old-fashioned poultice has given way to the aseptic cata-

plasm and the New Pharmacopeia has made one official—Cataplasma Kaolini. It is very questionable that this poultice can be well prepared by the ordinary druggist and the forms prepared by the pharmaceutical manufacturers (as Antiphlogistine) will necessarily remain most popular.

Whether an emollient or poultice is preferable in certain diseases is as yet unsettled; that depends on conditions present.

Cancer and Light.

We have been studying the physiological action and therapy of light in the cure of skin cancer for several years and the x-ray has many cures to its credit. Now, an investigator, Hyde (*Am. Jour. Med. Sci.*), after a careful inquiry that the skin of the human body, in a certain proportion of individuals, and in those only, is hypersensitive to the actinic rays, and this sensitiveness may show itself in the production of all kinds of skin diseases, even cancer.

His conclusions that the colored race suffer less than the whites from cancer of the skin and even cancer of other organs is interesting, but that this immunity is attributable to the pigmentation of the skin is rather a strong conclusion. A rational deduction would be that in order to prevent cancer dark clothing and an indoor life should be prescribed. The etiology of cancer does not depend on such simple conditions, in fact, the causation of disease is too often sought in very simple phenomena, when in reality the subject must be most complex.

Gonorrheal Septicemia.

More and more interest is manifested in the general gonococcal infections and Thayer's recent article will give an additional stimulus to the study of this remarkable disease. Here is another disease characterized by a persistent fever not unlike typhoid, which will perplex the practitioner unless he inquires into the presence of a urethral disease. Thayer (*Am. Jour. Med. Sci.*) gives the main points of interest in a series of cases, and concludes that a mild continued fever in connection with gonorrhea, is evidence of a true gonorrheal septicemia.

LEADING ARTICLES.

The Etiology of Cholecystitis.

The earlier conceptions of Cholecystitis, especially those concerning its pathogenesis and individuality have undergone great changes during the past few years.

It was Richardson's article, published in 1898, that seems to have exerted a determining influence on later thought and literature. Until this time, definite opinions were few. Observers seem to have considered the disease as uniformly secondary, either as a complication or sequela of the infectious diseases, or yet more frequently as a result of the presence of gallstones.

Even in the *Twentieth Century Practice of Medicine*, we find a statement by J. B. Murphy that gallstones are present in 74 per cent of all cases. There has been a modification of this view since even this recent date. Cholecystitis is more often recognized now and is not only an exceedingly infrequent complication of many of the infectious diseases but is seen, as Sheldon and others have pointed out to occur as a primary disease, with an etiology, pathology and symptomatology of its own.

I do not mean, however, to place undue emphasis on this newer view, because we retain and correctly, the assumption that either gallstones or some infection must be at the bottom of the vast majority of cases. That cholecystitis is no longer to be considered in the light of a complication only, marks a definite advance in our understanding of it as a disease.

Potain, in 1882, described acute cholecystitis as a rare and rapidly fatal disease. Courvoisier confirmed this opinion a few years later (1890). Since that time much has been written on the subject, and much remains to be said.

The pathogenesis of the disease may best be considered under the following divisions; the dietic and traumatic influences, the circulatory disturbances and the infections.

As to dietetic and traumatic influences few advances have been made, we may find the last word as we have it, on these subjects in any of the text-books. As to the rôle of the circulatory disturbances,

they are likewise interpreted, and it is only necessary to add a word on these matters: That the absorption by the liver from the stomach and intestine of irritating substances, such as large amounts of nitrogens and their by-products, of alcohol, of poisonous and non-poisonous alkaloids should determine the changes in the bile sufficient to produce a cholangitis, has not been determined by anyone. They have been so imputed, however, and perhaps, correctly, but of this we know very little, it will be necessary to find out the chemical nature of such bile.

As to the influences of circulatory obstructions, almost anywhere in the body, we know about as much. It is, of course, evident that anything which prevents a free and physiologic emptying of the right heart, will overfill the superior cava and the hepatic veins, and will engorge the liver with very rich, and perhaps, poisonous blood, but now, again, what the exact influence the chemical substances in such blood may have, or what influence a stasis even producing very great increase in the size of the liver may have in the production of a cholangitis or a cholecystitis, has not at all been determined.

It is safe to conclude that either of these factors can and will produce a marked venous congestion of the mucosæ of the biliary passages, which is, perhaps, all that many medical writers refer to when they speak of a catarrhal cholecystitis. For our recognition of these terms, much information remains to be gathered.

As to the etiologic rôle of gallstones, much more is known, especially, or perhaps, only, in association with bacterial infections. The mere presence of a gallstone would, perhaps, be capable of setting up only such a process as has been spoken of under the rôle of the other factors. (This, in fact, has been experimentally demonstrated with other foreign bodies), but the element of infection is so constantly present in the cholecystitis of gallstones (Mikulicz) that the two need hardly be separated.

As to the possible sources of infection of the gallbladder, we must distinguish two types; firstly, the descending or hematogenous type, in which the invasion comes through the blood stream, and, the ascending variety in which the infection occurs from the intestine, through the common duct.

As to the latter source of infection, *i.e.*, the intestine, much valuable work has been done, that of Fraenkel, Krause, Gilbert, Girode,

Naunyn, Leubuscher, Netter and particularly that of Miyake, deserve, among many others, mention.

These observers found to begin with, that bile is normally sterile, with the exception of that found in the common duct, in the vicinity of the duodenum, and furthermore, that it contains, like other body fluids a bactericidal substance of its own. This, Talma found to be quite powerful for the *b. diphtheriæ*, less so for the *b. typhosis* and less still for the *b. coli* group. The observations quoted for the two last organisms have been verified by many investigators, although all seem to acknowledge that these bacilli grow slowly but well in human bile. Miyake and Mignot found that *b. coli* may live for months in the gallbladder, with an apparent diminution of virulence however. Futterer and Lauriac have found living *b. coli* and *b. typhosis* in the gallbladder many months and even years after the disease. Hunner reports a case of acute suppurative cholecystitis occurring 18 years after typhoid fever with isolation of the bacilli. Groba reports a similar case occurring 17 years after typhoid. Fraenkel and Krause, in an examination of 130 cases at autopsy found the bile sterile in 105. And in 11 cases of gallstones, sterile in 5. Mieckowski aspirated the bile in 15 cases at laparotomy and found it uniformly sterile. Mikulicz, in 23 cases at operation for gallstones, found infection in 18.

With this data in our minds, let us now inquire for a moment into the biliary infections from a clinical view-point and from that of animal experimentation: The elimination of bacteria by the bile, in systemic infections by typhoid bacilli has been experimentally demonstrated by Cushing, Miyake, Chiari and by Futterer. With *b. glanders* by Ferraresi and Quarnesi, with staphylococci and pneumococci by Nicati, Corrado, Oemler, Strauss, Chamberland and others. With *b. anthrax* and cholera spirilli by Friedlander. With *b. coli* and streptococci by Blachstein, Letienne and others.

Clinically, bacteria have been isolated from the gallbladder, in streptococcic septicemia, in typhoid, in pneumonia and in tuberculosis.

Typhoid infection of the gallbladder by both routes, but especially by way of the blood has been demonstrated by a great many authorities. Flexner says that 50 per cent of typhoid cases coming to autopsy contain typhoid bacilli in the gallbladder. Keen places this percentage at 75.

As to infection of the gallbladder *per via intestinum*, we must first recall the important rôle of gallbladder-stones in this connection. Naunyn was the first to unreservedly support the bacterial origin of gall-tones, and although many investigations have since been made, throwing light upon the questions involved, the truths of his dicta have been almost universally conceded.

The recent work of Lartigau demonstrated clearly that the presence of a foreign body in the gallbladder is not sufficient of itself to produce a stone, but that a foreign body, plus infection, especially with a partial obstruction to the outflow of bile, will create an incrustation of this body. It is in this manner that a biliary infection may, by destruction of mucosa, produce a nucleus for a stone from epithelium and fat droplets. Miyake injected a culture of *b. coli* in the gallbladder of two animals where there was a partial biliary stagnation, and recovered stone in each case after a period of one year and ten months. Gilbert and Fournier produced gallstones in a dog, as early as 1897.

It has been shown, however, that invasion of the liver from the duodenum, when the outflow of bile was normal and where there existed no obstruction, was decidedly improbable, even virulent material producing no disturbance. Eisendrath says, on the other hand, with obstruction to the outflow of bile, infection occurred very easily from the duodenum, stagnant bile affording a decidedly better culture medium than flowing bile. It was found by Homan that ligature of the common duct above the ampulla, resulted in an extension of the duodenal bacteria into the liver within a few days, the stagnant bile above the ligature offering a medium which was soon invaded. This been accomplished even through two ligatures, (Ehret and Stolz). Miyake, furthermore, demonstrated that the introduction of a foreign body into the gallbladder was always followed by an increase in the number of bacteria.

It is in the light of these facts that we can understand that the presence of stones in the gallbladder, in preventing the physiologic play of its musculature both mechanically and by irritation to the mucosa, interferes with the continuous emptying of that viscus, causing therefore, a certain quantity of bile to remain in a relatively stagnant state and offering for this reason a more favorable medium for bacterial infection.

It is from such facts, remembering the great frequency with which gallstones are known to be present without causing any symptoms, that we must conclude that in a certain percentage of case that the attacks of so-called gallstone colic are nothing more than an acute cholecystitis consequent upon their presence in the gallbladder. In many cases, without these attacks the presence of stone would, perhaps, not have been suspected.

As to the bacteria that most often invade the gallbladder from the intestine, must, of course, first be mentioned, the *b. coli*. In 50 cases, Peterson found them present in 46, sometimes with other contaminations. The more acute forms of cholecystitis are said by Quincke to be produced by *b. coli*; the more chronic forms by staphylococci and streptococci.

Lastly, in this connection, I would like to state that the French authorities—Fournier and Mignon, regard biliary calculi as a natural sequence to a cholecystitis, believing as did Naunyn in the infectious source of such calculi. Welch, and later, Cushing, believed that clumping of the bacilli might be the source of stone. This view has gained ground and the finding of bacilli, colon and typhoid in the nucleus of stones has been reported a number of times.

Clinically, we must view this subject with the greatest interest. We will attach importance first, then, to the presence of gallstones, as has been pointed out, secondly, to the rôle of the infectious diseases. This has already been mentioned in typhoid, and I would like to add, DaCosta's 58 cases, with 39 deaths, and his 3 cases with recovery.

He states that typhoidal cholecystitis usually occurs in the third week of the disease, or may come on during a relapse or even many months or years after the disease. Camac places the most usual time for its occurrence between 10 and 30 days. From a number of authorities, it seems that the end of the third week is the classic time for the appearance of cholecystitis in typhoid. Such cases may be mild and transient, or as Stengel points out, intensely acute or frequently protracted and recurring.

Heyrovsky speaks of the etiological relation of influenza and cholecystitis. Packard reports a history of such a case, which, however, lacks utterly in scientific interest.

Anders reports 3 cases of mild catarrhal cholecystitis complicating pneumonia. Clairmont recorded a case of cholangitis and abscess of the gallbladder in a case of pneumonia.

Gilbert and Girode believe that the icterus so often seen in pneumonia is due to an angiolitis caused by the *b. coli*. Banti attributes this icterus to an hemolytic action of the *diplococcus pneumoniae*, while Petrov believes that it is due to a local disease of the hepatic ducts rather than to an hemolysis.

It seems probable that in cases of infectious diseases, in which we have any reason to believe that there exists the least degree of hepaturgy that the development of cholecystitis would not be improbable.

Lastly, we will not fail to look for the *primary form of cholecystitis*, not limiting ourselves to the etiology and pathology laid down in our text books on medicine.

A. S. BLEYER.

[Read at the Bimonthly Medical Society, March 6, 1906.]

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PROSTATIC HYPERTROPHY.**Its Etiology and Pathology.**

Without question, one of the most important, most painful, and, at times, one of the most distressing affections to which men in advanced middle life are subject, is prostatic hypertrophy. That the disease is of not infrequent occurrence is evidenced by the fact that of 360 men examined by Johnson 79 per cent were afflicted with the enlargement of the prostate. It must be admitted, however, that only about 18 per cent of the sufferers present distressing symptoms. During the past few years our knowledge concerning prostatism has been markedly advanced, and in this brief résumé the recent findings will be discussed.

ETIOLOGY.

The true etiology of prostatic hypertrophy has been, and continues to be, a much discussed question. John Hunter advanced the theory that the lesion was of inflammatory origin. Virchow and others concurred in this belief. The various other theories presented are :

1. That the lesion is a senile fibrotic change shared by other organs of the body.
2. That it is produced by sexual excess.
3. That it is due to ungratified sexual desire.
4. That it is a change secondary to degeneration of the bladder, and is an attempt to counteract the same.
5. That it is due to the action of the testes (perverted testicular secretion).
6. That it is a change normal to advanced years.
7. That it is due to chronic inflammation practically producing a cicatricial contraction, which ends in constriction of the gland acini or gland ducts.
8. That it is a catarrhal process of septic origin, which gains access from the bladder and urethra.
9. That it is a new growth of adenomatous nature.

Bangs is a strong adherent of the theory that the overaction and unphysiological—especially the latter—exercise of the prostate precedes, finally excites, and then prolongs the inflammatory irritation which eventuates in the recognized tissue changes. Of 300 cases of enlarged prostate examined by him, 85 per cent of the patients were

subjects of abnormal or unphysiological sexual indulgences which were excessive and continued for years. Pilcher feels confident that it is not necessarily the length of functional activity of the gland and age of the individual which causes prostatic hypertrophy, but that it is a glandular overgrowth influenced by the degenerative changes of old age in an actively functioning gland which produces the change. A previous gonorrheal infection, or any other inflammatory process, may influence the development of the disease. It is worthy of mention that Cumston found that 80 per cent of patients suffering from gleet show prostatic involvement. It naturally follows that it would be interesting to know how many of these latter cases develop chronic prostatic hypertrophy.

Wallace very correctly maintains that many of the theories advanced do not merit consideration. He feels confident that the change is an adenomatous one, the exciting cause of which may be chronic inflammation. Thayer concurs in the opinion that the lesion is due to long continued congestion, kept up for years. This may be the result of masturbation, imperfect intercourse, habitual excitement of the organ without the normal relief of the functional hyperemia consequent on ejaculation, extension of chronic inflammation from the posterior urethra, and varicose conditions of the veins and impeded return. It is thus quite evident that investigators are not universal in their opinion as to the etiology. That prostatic hypertrophy is of chronic inflammatory origin must be admitted. Just what the exciting factor of the latter may be, is the crux of contention.

PATHOLOGY.

Squier looks upon prostatic hypertrophy as an interstitial change which has been insidious in its onset, first affecting the innervation of the gland and its enclosed urethra, giving rise through its close connection with the hypogastric plexus of the sympathetic, the lumbar plexus, and spinal nerves, to many reflex symptoms in the kidney and bladder, as well as those of a purely sexual character, and eventually, with the declining vigor of the patient's later years, becoming a mechanical obstruction to the outlet of an already overworked bladder. Stoker describes three conditions of senile enlargement of the prostate:

1. True hypertrophy of the gland without any interstitial growths.
2. The existence upon and within the substance of the gland of

one or more encapsulated tumors, distinct from the substance of the gland proper, and myomatous or adenomatous in structure. Both forms of neoplasm or only one of them may be present.

3. A mixed condition of true hypertrophy and interstitial growths of the second class.

This latter condition is much the more common. The tumors may eventually reduce the prostate to a state of pressure atrophy, or cause it to become a mere capsule for adventitious growth. Stoker maintains that it is this latter condition which in all probability has given rise to so much dispute, and uncertainty as to the true pathology of enlarged prostate.

Alexander has asserted that the so-called third lobe of the prostate is always of the nature of an overgrowth from one or other lateral lobe; enlargement of the prostate particularly affects the lateral lobes. He has found that the layer of prostate behind the urethra does not enlarge; the middle enlargement may be of three varieties: First, muscular, those cases with a bar; second, glandular, and then encapsulated; third, hypertrophy of mucous glands and tissue

According to Pilcher's findings there are three types of prostates causing urinary obstruction:

1. The large, soft type.
2. The hard, small, contracted type.
3. The mixed type.

He contends that the contracted form is not a secondary stage of the large, soft type of the hypertrophy, but is distinct from it. He states that in some of the atrophic cases the glandular elements are relatively diminished and the muscular element relatively increased. Hypertrophy results from glandular overgrowth, influenced by the degenerative changes of old age, and other agents which tend to produce formation of fibrous connective tissue in an actively functioning gland. In many instances there is present a true muscular hypertrophy.

It has been stated that the histological examination indicates that the point of origin of the inflammatory process is in the prostatic urethra, extending thence along the gland ducts from the urethra toward the periphery of the prostate, the round-celled infiltration being most marked in the vicinity of the verumontanum. Bangs contends that the verumontanum is usually enlarged and tender in patients who have practiced coitus reservatus or coitus interruptus, and in those

who have committed sexual excesses. Wallace believes that the usual form of prostatic hypertrophy is an adenomatous one, and that the adenomatous tissue may surround the urethra or form masses in the lateral parts of the organ, behind the urethra, or in all three parts.

In a very recent, and I may add a very excellent, monograph, Wallace says that all observers admit:

1. The changes do not occur before middle life.
2. The appearance in the normal spongy tissue of the opaque areas composed for the most part of gland tissue.
3. The growth of such areas either single or in groups, to form, in a considerable number of cases, encapsulated tumors.
4. The preponderance in the stroma of such tumor of fibrous over muscular tissue.
5. The round celled infiltration.
6. The appearance in alveoli of desquamated epithelium cells, polymorphonuclear leukocytes and amyloid bodies.

Chetwood calls attention to the interesting fact that prostatism may be due to a contracture of the neck of the bladder.

Keys states that the most notable changes associated with hypertrophy of the prostate are:

1. Bulging of the posterior surface.
2. Elevation of the urethral orifice.
3. Production of a middle lobe.
4. Lengthening and distortion of the prostatic urethra.

A future article will consider the symptomatology and diagnosis.

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The Non-Febrile Spasms in Infancy.

Infantile elcampsia induced by some bacterial or toxic agency and preceded by a high rectal temperature is a condition which is more generally recognized and has its etiology more generally appreciated than a large group of local or general spasms which occur in infancy and is caused by some malnutrition. Several clinical types may be differentiated:

CARPOPEDAL SPASM.

In this form there is a tonic contraction of the wrist, hand and foot. The affection occurs spontaneously, but an acute attack may be aggravated by pressure on the nerve trunks and blood vessels of the upper extremity.—(Trousseau's phenomenon). Yet, this sign is often absent. The hand is flexed on the wrist, and the thumb is pressed on the palm with the fingers grasping the thumb. The toes are flexed, foot extended and slightly everted. The tonic spasm usually begins with some crying on the part of the infant, which suggests that the contraction is painful. The duration of these tonic spasms varies from a few minutes to several days. Corroborative evidence may be found in the presence of Chvostek's sign: tapping the facial nerve along its course causes sharp contraction of the facial muscles. A sharp contraction of the corrugator supercilii is most characteristic. Tapping the knee joint with a percussion hammer often causes sharp contractions of the facial muscles. Increased electrical irritability of the muscles is also present.—(Erb's phenomenon).

LARYNGO SPASM.

The infant, on excitement, sometimes spontaneously, suddenly shows a difficulty in inspiration accompanied by a loud crowing sound—laryngeal stridor. The degree of the spasm varies; often repeated mild attacks occur during the day, but no alarming suffocative symptoms. Occasionally the attacks are so severe as to cause severe cyanosis or even death. The parents usually believe that the baby is threatened with croup.

Examination of the child often reveals the same increased irritability of the muscles mentioned above.—(Chvostek's, Erb's, etc). In both types, malnutrition, improper feeding, and the physical signs of rickets are corroborative.

CONVULSIONS.

Repeated attacks of more or less general attacks of convulsions

in infancy not referable to an acute infectious disease always indicate an inquiry into the nutritive condition. In simple tetany the diagnosis is comparatively easy; but when these contractions are more or less general, doubt as to their actual import is natural. A few general characters by which they may be differentiated from the local spasms may be enumerated.

a. The convulsions are more tonic than clonic. The infant becomes rigid. His neck, eyeballs, trunk, upper and lower extremities become rigid, in all kinds of combinations and in all degrees of severity.

b. The child cries when the convulsions begin—this is not invariable.

c. There is an increased excitability of the muscles.

d. The temperature is normal, but evident signs of rickets are noticeable.

e. The consciousness is not usually lost. This is at times hard to determine.

THE MIXED GROUP.

Very often these types are found more or less associated. Thus laryngo spasm and carpopedal spasm are often combined. In the general convulsions the mother will often describe the laryngeal stridor as preceding or accompanying the attack. Persistent carpopedal spasm may be aggravated by an attack of general tonic convulsions, in which the muscles of the upper arm, shoulder, neck and back are implicated.

Again, the evidences of increased excitability of muscles and rickets must be sought.

Altogether in the non-fibrile convulsions of infancy, the diagnosis may not be clear, but the nutritive condition needs attention.

TETANY ASSOCIATED WITH OTHER DISEASES.

Occasionally rickets occurring in an infant who is an epileptic, or who suffers from cerebral palsy, may cause the most puzzling symptoms and lead to errors of diagnosis.

In a case of a boy 1 year old, the occurrence of repeated attacks of convulsions with increased excitability, while being fed with an artificial food, naturally led to the diagnosis of tetany. The subsequent history proved that epilepsy was also present.

In another patient, 7 months old, fed on peptonized milk and

showing clearly the evidence of rickets, the presence of laryngo spasms, carpopedal spasms, attacks of general rigidity, Chvostek's sign and Trousseau's sign made the diagnosis tetany very plain. At the same time an increased patellar reflex was present and the infant was unable to hold up its head. Cerebral palsy was subsequently discovered to be present.

EPILEPSY.

Repeated non-febrile convulsions in infants or children, not explicable on the ground of nutritive fault, with loss of consciousness, and no evident changes in the nervous system, must, after a period of observation be placed under the diagnosis, epilepsy.

PATHOLOGIC MYOTONIA

All newly born infants have a physiological hypertonicity of the muscles as evidenced by the stiffness of the extremities. A pathological myotonia may also be congenital. It is characterized by a painless contraction of the muscles on some psychical excitation. In severer grades, there may be a constant contraction of one or more muscles.

This disease is congenital, not caused by nutritive disorder, and the excitability of the muscles on mechanical or chemical stimuli is absent.

Mode of Infection - Cerebrospinal Fever.

Nothing in the history of epidemeology is more obscure and presents more fascinating problems than the causation and origin of cerebrospinal fever. Bacteriologic research, however, has definitely shown that a specific micro organism, the micrococcus intracellularis (Weichselbaum) or preferably the meningococcus, is constantly found in the meningeal exudate, and is generally regarded as the causative agent. The improbability of these bacteria reaching another host from the cranial cavity of one suffering from the disease, very sharply suggests that there may be other parts of the body invaded by this germ (*e.g.*, nose and throat) and, indeed, may be the most frequent form of infection, while the meningitis is only an occasional form of the disease. How else are sporadic cases to be accounted for? Indeed, Hare has recently, reported the history of several cases, in which the disease was clearly transmitted from one to the other, while two other persons in attendance developed a severe sore throat.

A very exhausting inquiry was made by Balduan and Goodwin (*Medical News*, December 30, 1905), and their conclusions may be regarded as the latest expression of our knowledge :

1. The disease has occurred in several large epidemics during the past century; sporadic cases are met with in the periods between these epidemics and constitute the link between the epidemics.

2. We do not know the circumstances giving rise to these epidemic outbreaks.

3. The epidemic form of cerebrospinal meningitis is almost almost invariably associated with the meningococcus of Weichselbaum; the sporadic cases are frequently associated with this organism.

4. During the first week of the disease the meningococcus is present in the nasal mucus in fully half of the cases; later in the disease it is found in a smaller fraction of cases. It also occurs in the nasal secretion of some persons who are in close contact with cases of cerebrospinal meningitis. In our series this was about 19 per cent of the persons examined,

5. The meningococcus has a low vitality, being rapidly killed by drying and on exposure to sunlight. This makes infection by dust extremely improbable.

6. The disease seems distinctly communicable in the sense that the *organism is transmitted* from the nasal secretion of one person to another. The transmission of the organism, however, is not synonymous with *transmission of the disease*.

7. The susceptibility of the individual is an important factor in the development of the disease.

8. It seems unlikely that infection is frequently due to trauma or the result of overexertion.

9. Cerebrospinal meningitis in other animals seems to have no connection with the diseases in man. The subject, however, has not been sufficiently worked out to admit of positive statements.

10. There is no evidence to show that the disease is carried by vermin or insects.

11. The disease in some epidemics affects mostly infants, in others, older children, and sometimes chiefly adults. The reason for this is not at all clear.

12. The period of incubation seems to be short, from one to four days.

13. There is no evidence of the occurrence of "dwelling in ffections."

CURRENT EDITORIAL TOPICS.

The Vicious Insane.

"From that memorable day on which Pinel struck the manacles from the wrists of the insane at the Becetre, the condition of this class of unfortunates has improved."—*Medical News*, Nov. 4, 1905.

The changes, however, have come very slowly, for the fettered hand in Pinel's time locked and barred windows were substituted. The incarceration in asylums is gradually being abolished and the "open door" is becoming popular. The principal of non-restraint is really a fundamental guide in the treatment of the insane at present.

Too many asylums have the "open door" in a very restricted sense; and the daily walk does not mitigate the injustice done toward harmless patients. The writer continues:

"The need for, and the effort to give a more enlightened and humane freedom to these patients, who in reality require no restraint whatever, has led many alienists to advocate special means of dealing with the vicious insane, those who from one motive or another are the mischief breeders in the asylum population, and many others.

"A recent and powerful suggestion along these lines comes from Serieux in the *Revue de Psychiatrie et de Psychologie Experimentale* for July, 1905. In his review of this general subject Serieux advocates the establishment, not only of hospitals for insane criminals, *i e.*, those becoming insane while serving sentence, but special hospitals for the dangerous class of insane to which should be transferred all those who have committed dangerous acts while insane, including those already committed to other hospitals, the insane criminals whose sentences have expired, the morally insane, born criminal, degenerates with dangerous tendencies and, in general, vicious insane of all classes."

There is a powerful tendency in modern hospitals to classify patients and assign them to special departments, and this very rational tendency is being worked out with the insane inmates of asylums; naturally, this must be regarded as a distinct advance. The vicious lunatic, therefore, would not be placed in the same hospital with the undisturbed patients, and the restraint necessary for the former, need not be applied to the latter. The general open door for all insane alike is, of course, ridiculous. To have the insane with criminal tendencies constantly escaping is neither wise nor humane.

Hemophilia.

Curiously enough, while hemophilia is in most cases hereditary, it is transmitted through the females of the family who rarely suffer from it. In *Medical News* October 21, 1905, attention is called to the possibility of females suffering from the disease, but dying in childhood, otherwise the menstrual function would be a most dangerous process. The disease would tend to disappear entirely if females had this hemorrhagic tendency, since menstruation and child-bearing would mostly be fatal.

Lachean Grant proposed the use of ovarian extract for the treatment of bleeders on theoretical grounds, and really has been partially successful in practice.

The writer furthermore calls attention to an alleged similarity between certain forms of hemorrhagic arthritis in connection with hemophilia and tuberculous disease of the joints, but suggests that some of the tuberculous cases may really have been hemophilia, since the latter disease, on account of cough and hemoptysis, may resemble tuberculosis :

“ While the problems connected with the pathological changes are far from being solved, the attention of pathologists is centering about studies tending to show that the affection is not a change in the blood itself, but is rather a congenital pathological anomaly of the vascular system. For a long time it was considered that the reason for the persistence of the bleeding in sufferers from hemophilia was a lack of coagulating power in their blood. The effects of calcium chlorid therapy would tend to support the view. The coagulating power, however, has been tested recently in a large number of cases and has been shown to be quite equal to that of normal individuals. On the other hand, careful histological investigations have tended to support Virchow's conception of a peculiar delicacy of structure in the smaller blood vessels and a tendency to the absence of the elastic material, on which the contraction and closure of injured blood vessels depends. The bearing of these observations is reinforced by some recent therapeutic developments. A very successful method of treating the bleeding in hemophilia has been found in the use of large doses of some derivative of the suprarenal gland. This has the effect of stimulating the blood vessels to contract and consequently makes up, for the time being at least, for their natural lack of contractility in this disease. Notwithstanding this successful suggestion for therapeutics, however, it is to be noted that sufferers from hemophilia do not exhibit any tendency to have lower blood-pressure than normal individuals and in-

deed have no constitutional manifestations of their affection at all, except when trauma of some kind leads to the beginning of hemorrhage. Moreover, suprarenal extracts have proven unavailing in many instances."

Is Alcohol a Cardiac Stimulant.

The pharmacological researches on the action of alcohol on the activity of the heart and arteries in the last few years have reached such contradictory results, that the test tube and animals have lost, in a great measure, their reliability as criteria for exact therapy to the general practitioner. The work has to be gone over again and again, but the clinician generally will insist that alcohol does cause an improvement in the circulation.

American Medicine, December 23, 1905, epitomizes the results of a pharmacologic inquiry by Drs. H. C. Wood and D. M. Hoyt. The research was carried out principally on dogs and the conclusions are remarkably corroborative of clinical experience :

"Alcohol does not seriously affect, in the normal animal, blood-pressure; elevates the blood-pressure after vasomotor paralysis from section of the cervical cord; increases enormously the rate of the blood-flow; directly stimulates the heart; therefore, the general action upon the circulation of the moderate dose of alcohol is a great increase in the rapidity of the circulation, caused by cardiac stimulation, with vascular dilatation, due to depression of the vasomotor centers.

"In remarking upon the action of the drug upon the cerebrum, they state there is no sufficient proof that alcohol is a direct cerebral stimulant. So far as consciousness is concerned, its tendencies are to produce sleep rather than wakefulness. Finally, it is regarded probable that the cerebral excitement and increased activity following the free imbibition of alcoholic drinks is due not to the direct action of the drug upon the brain, but the enormously increased flow of blood running riot through the cerebrum."

Food Preservatives.

Every newly discovered drug or an old well known chemical used in a new way is looked upon as a rank poison until we somehow get accustomed to it. Perhaps, some day we will not raise our hands in horror when some one insists on using formaldehyd in milk. It is only too true that the profession has at times lead in rampant criticism of

preservatives not based on material foundation. *American Medicine*, December 23, 1905, says :

"The wholesale poisoning scare in regard to preservatives and adulterations in foods, has been discussed recently in the lay and medical press. It brings up unpleasant memories of the malodorous days of the embalmed beef scandal, with the remarkable conflict of testimony as to whether a little boric acid in fresh beef was as harmful as saltpeter in corned beef. Indeed, one of the government bureaus in Washington seems to have been puzzling over the problem ever since, actually experimenting with a poison squad of volunteers desirous of uncomfortably purchased glory. It is, no doubt, disquieting to know that creasote, a rank poison, is put on our hams, or in the Scotch whisky we might prescribe for others, but these fears disappear when we learn that the old-fashioned "smokehouse" or burnt barrels did the same to the bacon and whisky of our forefathers. Indeed, it seems to be a rule to look askance at every innovation, whether it be good or bad - even sugar was once considered a dangerous preservative and forbidden by law. Copper, once thought highly dangerous in small amounts, is now known to be quite harmless, and cooking vessels of this metal are permitted. The minute quantities of dyes, used in our ice cream or cake or to color our butter to its proper appetizing yellowness, are quite harmless. Alum may be harmful, no doubt, but the crusade against it, for trade purposes of certain baking powders, bordered on the ridiculous for a time. Of course, we do not want the whole list of chemic preservatives dumped indiscriminately into our foods—we prefer them as Nature made them—but we must remember that we are no longer living as nature intended when she supplied the foods. We bunch together too much and too far from the food supply which we couldn't get at all by the old methods."

The Fighting of the Noise Evil.

The *London Lancet*, not long ago, called attention to the harm done by avoidable noises. A few American medical journals also discuss this subject editorially.

The *Medical Record*, says :

"Urban life has its discomforts as well as its pleasures, and those who would have the latter must put up, as patiently as may be, with such of the former as are unavoidable. But this does not mean that what can be cured must be endured—quite the contrary, for the nuisance makers are so callous to the misery they cause that unceasing vigilance is needed to curb their persistence. Among the greatest of

the inflictions of city life are the noises, some of which are unavoidable; many, however, can be reduced or silenced altogether. The reason why they are allowed to continue is that the maker of illegal noises never voluntarily abates his own nuisance and yields only to compulsion of the most emphatic sort. This compulsion comes as a rule only when the public conscience is aroused. But the awakening of the public conscience is no easy matter, and one who would attempt it must be endowed with energy and perseverance of no mean order. The truth of this is shown in the crusade, initiated by Mrs. Isaac L. Rice, against the unnecessary whistling of tugboats navigating the rivers which encircle Manhattan Island. For years this whistling has been kept up with supreme disregard of the rights of citizens, and until this lady took the matter up and organized a public protest against the practice there seemed to be no possible chance for relief."

American Medicine, November 25, 1905, calls attention to the yelling peril, a new title for the street noises. The medical profession has been protesting against this for a generation or more, but success of abatement is only occasionally procured. The writer continues :

"A healthy, robust man can ignore habitual sensations, and, unfortunately, is wholly unaware that any damage is being done. He may even suffer from silence should he move to the country—not an uncommon cause of insomnia, indeed. The sick, the convalescents, and particularly the nervous, are the ones who feel the damage and cry for relief. Perhaps, even the children are silent sufferers. Modern transportation has introduced an awful nuisance of this nature, which seems irremediable, though inventors are constantly at work to reduce it to a minimum. Boys are naturally noisy and must act like barbarians now and then to blow off steam on holiday nights and when their foot-ball team has artistically done up the enemy, but there is no reason why night should be made hideous at other times. By all means let the crusade continue, for it might be the means of saving many a life in the balance when a few hours' quiet sleep would turn the scale. It is a matter which the American Civic Association can take up among its other numerous works. It is more than a nuisance - it is destructive of nerve tone and a menace to health, so that physicians can justly aid in the effort to abate the evil."

Physicians and Investments.

When a layman is sick the best advice is to send for an expert in disease, honest and competent. When you are to build a house the architect is cheerfully consulted ; when a physician has accumulated a

little cash, does he consult an honest, competent business man? The tendency is for every physician who attempts to judge whether a certain enterprise is a good thing, and the consequences are usually disastrous to the physician.

The question of investments was discussed last autumn before a prominent Eastern Medical Society, and the *New York Medical Journal* editorially state:

"A prominent layman, well known as a successful broker, was invited to make some remarks upon the latter topic, which were very well received. He said that the banker or broker held very much the same confidential position toward his client as the physician held toward his patient. We should, therefore, first select a broker of prominence and unsullied reputation and be guided by his experience and judgment in making investments. It is not to the broker's interests that his client should lose his money, because he then ceases to be a customer. The advice he gives may not be free from mistake, on account of unforeseen contingencies, and because no one is infallible, yet, in the long run it will be wise to follow it. With regard to the investments themselves, the speaker advised adhering to the legitimate and the avoidance of the illegitimate or the quack, get-rich quick schemes. He especially counselled professional men against buying stock on a margin, which often led to trouble and loss. The percentage of men who purchase their securities outright and lose is small indeed. On the whole, it is the part of wisdom, especially for professional men, to let speculation of all kinds alone, and, with any surplus money they may have to invest, to purchase such bonds as a conservative broker with a good reputation recommends to them."

Testing for Bile in the Urine.

Every clinician will concur with the writer, in the *New York Medical Journal*, January 6, 1906, when he pronounces Gmelin's test unsatisfactory at times; for often urine which undoubtedly contains bile, fails to give the characteristic play of colors. Attention is called to Rugler's test:

"The reaction depends upon the capability of the paradiazobenzenes to color an alcohol-chloroform solution of bile pigment intensely red. Two solutions are prepared:

"1. Five grams of paranitroamidobenzene are dissolved in 180 cc. of distilled water, and, while the solution is gently shaken, 25 cc. of pure sulphuric acid are added.

" 2. A solution of $2\frac{1}{2}$ grams of solution sodium nitrate in 200 cc. of distilled water.

" Four or five cc. of chloroform are placed in a test tube and the tube is then filled with filtered urine. The two fluids are then thoroughly mixed, and after the chloroform has settled to the bottom of the test tube the urine is decanted cautiously. A small quantity of 96 per cent alcohol is then poured over the chloroform extract, 5 or 6 drops each of solution 1 and 2 are added, and the test tube is shaken thoroughly. If biliary coloring matter is contained in the urine, the chloroform, which settles to the bottom of the tube, will be colored orange or red."

A far more sensitive test is that of Huppert :

" Eight or 10 cc. of urine are treated with milk of lime, and the resulting precipitate is filtered off and washed into a beaker with alcohol containing sulphuric acid; more sulphuric acid is added to insure an acid reaction. The liquid, with the precipitate suspended in it, is then boiled. The precipitate will be decolorized, and, if bile pigment is present the liquid will assume a green tint."

The furfurol test for the presence of bile is considered satisfactory. To a few cc. of urine add 2 to 3 drops of a solution of 10 drops of furfurol to 4 ounces of distilled water, shake until a thick foam is formed on the surface. If strong sulphuric acid is now added to the foam, the presence of bile will be indicated by a pink tint of the foam where the acid runs through it.

Scopolamin Anesthesia.

Our readers will recall an article by Seelig in the *COURIER OF MEDICINE*, and the early reports were indeed very gratifying. Dr. J. V. Shoemaker discussed scopolamin and called attention to its dangers in large doses before the Medical Society of the State of Pennsylvania. It is difficult to obtain the drug in a pure state, and individual idiosyncracies occur, hence it should not be given in the large doses as originally recommended. The subject has been thoroughly reviewed in several foreign and American journals, and after more than a dozen deaths from its administration have been reported it is no wonder that the New York *Medical Journal* exclaims :

" Away with scopolamin anesthesia ! The profession has been very tolerant of recent attempts to imitate an ancient and clumsy

method of anesthetization by the subcutaneous administration of scopolamin and morphin. We believe that in this matter toleration has been carried too far, for it ought to be evident to the mediocre understanding that the procedure is 'treacherous and dangerous,' as Bakes remarks."

Surgeons who formerly were enthusiastic in the praise of this method are now denouncing it. "The truth is that scopolamin is a potent poison to the respiratory and cardiac centers, and its use, while, not promising any well defined advantage as an anesthetic, is too dangerous to warrant further attempts to bring it into favor."

Sexton (*Lancet-Clinic*, November 18, 1905) reported a death following scopolamin morphin injection, and while this author does not discard its use entirely, he warns that its usefulness will not find its field among the aged, feeble and decrepit, or among those who have tuberculosis, heart disease or some cachexia.

Like spinal anesthesia the scopolamin narcosis seems to belong to the myriad number of promising medical researches that must soon be forgotten.

The Battle With Quackery.

The *Popular Science Monthly* for September, 1905, contains a striking article by a layman on the evils of quackery, and the *Medical News* editorially comments on this grievance. We quote:

"Since the days of Hippocrates the medical profession has been fighting superstition, within its ranks as well as without. Now that a wider education is, in a small measure, enabling the masses to reason instead of following blindly, it would appear that there is less hope than ever of dealing the death blow to quackery; for this very reasoning power, this newly-awakened belief in one's ability to choose and discriminate has been seized upon by the modern descendant of the ancient quack, and the specious appeals to the patient's intelligence which appear in the advertisements of the daily papers are far more seductive than the cruder forms of quackery that advertised universal panaceas."

The writer quotes the layman above referred to:

'Given,' says the author, 'on the one hand, the limitations of scientific medicine, the pain and dread of disease and the power of autosuggestion, and on the other hand, depraved humanity, hard-driven in its struggle for existence, but cunning in the knowledge of men, and you have the essential parts which, with a few minor pieces,

make up the smooth engine of quackery. Psychotherapeutics and knowledge of human nature constitutes the quack's entire outfit; all he really needs is moral atrophy and the instincts of a cheap drummer.'

"Very cleverly is it hinted that 'it is not bare accident that America is at once the home of quackery and the home of the free,' for the passion for personal freedom is, as one writer has savagely described it, the attitude of 'jealously safeguarding to every citizen the sacred right of going to the devil in his own way.'"

Altogether, the cure of this evil must be done by the periodicals who fostered it, and the magnificent efforts of *Collier's*, *The Ladies' Home Journal*, and *The Evening Post* deserve generous support by all broad-thinking minds.

The *Texas State Medical Journal* refers to an incident by which it is very clearly shown that Christian Science is rejuvenating the old belief in witchcraft. Since it is becoming the custom of this cult to explain its failures of treatment to the evil thoughts of others, we shall not be surprised to hear of these evil thinkers being persecuted. Eighteenth Century modes of thought will persistently crop out in spite of the progress of a liberal education.

MEDICAL DIGEST.

Animal Remedial Preparations.

Wainwright (*Med. Rec.*) reviews the widening field of usefulness opened to the employment of glandular extracts by careful experimentation following the somewhat extravagant claims of Brown-Séquard and D'Arsonval.

The main difficulty in the investigation of the active principles of these various secretions and organs has been their minute quantity, which limits a study of their chemical nature and their great activity, as evidenced not only by their specific effect but also by such untoward manifestations as tachycardia and syncope following very small doses. The active principle, however, seems to belong to the same class as the leukomains, lecithins and protagons, which may split up into glycoposphates, stearic acid and cholins, the powerful actions of which are well known.

Of all the glands of the animal organism the thyroid and its preparations are best known, the active principle of which, thyroïdin, was discovered by Baumann. Osborne sums up the physiological action of the thyroid in the statement that this secretion seems necessary for the proper equanimity of the central nervous system, to the proper quantity of mucin which shall appear in the tissues, to the proper organization of phosphorus for assimilation into bone salts and to properly regulate the peripheral circulation, thus regulating the heat-loss and the perspiration of the skin, as is shown in a disturbed condition by the drying of the skin in myxedema and by increased perspiration in Graves' disease. The gland seems also to have some influence upon the rapidity of cardiac contraction and upon the circulation of the brain.

Besides the well known advantages of the use of thyroid extract in myxedema, cretinism, obesity and in Graves' disease in the second stage, without palpitation, cerebral excitement and loss of weight, favorable results have been reported from its administration in lupus, scleroderma, ichthyosis, psoriasis, alopecia, prostatic hypertrophy, cicatrices, amenorrhea, dysmenorrhea, during and after puerperal eclampsia, endarteritis, contracted kidney, cirrhosis of the liver and following fractures.

Kashiwanura has recently studied the possible uses of thyroid preparations in the infectious diseases, since it has been found that in diphtheria, scarlet fever, miliary tuberculosis, measles, fibrinous pneumonia, puerperal fever, typhoid fever, septicemia and pulmonary tuberculosis—there exists some hyperplasia of the connective tissue of the thyroid together with an accumulation of colloid material in the interstitial lymphatics in many instances.

The thymus gland contains more nuclein and hence more physiologic phosphorus than any other organ. Mendel believes that the thymus gland greatly influences tissue formation, especially of the osseous system during childhood and has treated more than a hundred rachitic children with great success by the administration of as many grams daily of fresh thymus gland as the child numbered in months, therein following the autopsy findings of Fiedlaben, which disclosed always great alteration of the thymus in rachitis. Thymus gland does not cause stimulation of the heart as does the thyroid, and Osborne deems its use beneficial in hypersecretion of this latter organ and of great value also in tuberculosis.

In discussing the properties of suprarenal extract and its active principle, adrenalin hydrochlorid, the author states that pre eminently in these agents is possessed the power of maintaining vascular tension and of increasing the tone of all muscular tissue, for which reasons it is to be considered the ideal cardiac tonic and stimulant, and probably the best hemostatic known.

The astringent and hemostatic effect is obtained by means of contraction of the small arteries and has no chemical or other effect upon the blood, hence it is non irritating, does not form a clot, retains its activity in the presence of albumin and has no cumulative effect.

Given by the mouth suprarenal extract will relieve congestion in any part of the body—of the eye, ear, nose, throat, lungs, liver, kidney, bowels, etc., and its local employment is of the greatest importance in the treatment of numerous diseases of the eye, nose and throat, or in combination with cocain, in the surgery of these or other parts, operations being made possible even in bleeders by its use. This agent has been used successfully in the treatment of neurasthenia, pruritus of the vulva and anus, exophthalmic goiter, rachitis, to improve the mental condition of epileptics and to relieve the pain of ulcerating cancers and tuberculous laryngitis.

According to Bates its use in heart diseases results in the regulation and strengthening of a weak or intermittent pulse, with consequent equalization of circulation in all parts of the body, although the effect is but temporary, and in the opinion of Florsheim hardly to be obtained in aortic disease.

This extract is also considered by Schafer to be the most efficient uterine contractor known, whether applied directly to the muscular tissue or introduced into the circulation, either in the pregnant or non pregnant condition. That other uses of this gland may be found is evidenced by the contention of Crofton that it contains a powerful diastatic ferment, in amount nearly as great as is found in the pancreas.

The extract of the pituitary body has obtained an established use in the treatment of acromegaly, the toxic headaches of which are much relieved by this substance. Osborne is of the opinion that there exists an undoubted relation between the thyroid gland and the pituitary body, since disturbance of one seems always associated with perversion of function in the other, as in the case in acromegaly. Dana also claims some benefit from the use of pituitary substances in Parkinson's disease, or paralysis agitans.

Spleen extract is employed with benefit in all diseases associated with enlargement of the spleen, such as Hodgkin's disease, leukocythemia, chlorosis and enteric fever. In exophthalmic goiter it seems also to be beneficial, although it has a somewhat irritating effect upon the stomach. Jez has introduced an extract made from the spleen, thymus, bone marrow, brain and spinal cord of immunized animals, which he has administered to typhoid patients with such benefit that he claims for it a specific therapeutic effect as well as furnishing an able diagnostic agent.

Hepatic extract is said to be of value in diabetes mellitus due to functional debility of the liver and in alcoholic cirrhosis, but the use of renal extract has proven of only temporary benefit in the treatment of nephritis and uremia.

Schober and Mallet have used parotid gland for the relief of dysmenorrhea, and it controls pain in simple ovaritis.

Extracts of nerve substance have been recommended in epilepsy, locomotor ataxia, chorea and neurasthenia.

Pulmonary extract has been favorably used in pleuropulmonary suppuration with osteoarthritis, the progress of the osseous deformities being arrested thereby.

Pancreatic extract has found its principal field in the "peptonizing" or predigestion of foods for invalids and infants. The author states that contrary to the general idea the medium in which it acts may be either alkaline or acid. Its effects are found variable in the treatment of diabetes mellitus.

Testicular extract is rich in nuclein and phosphorus and while possessing no particular effect upon the sexual system it is a good stimulant and aphrodisiac as well as a nerve tonic, although all the claims made for its use in the treatment of neurasthenia, epilepsy, tabes, etc., are scarcely to be accepted without reservation.

Poehl and Senator have established without doubt, however, that a properly prepared testicular extract possesses a powerful antitoxic effect by the regulation of an abnormally diminished alkalinity of the blood to the normal.

In carbon dioxid or chloroform poisoning, where the oxidizing power of the blood is reduced, the normal state is claimed to be restored by its use. By the aid furnished metabolism by this substance its advocates also claim beneficial results in diabetes mellitus, rachitis,

tabes, syphilis, pneumonia, typhoid fever, neuroses, the uric acid diathesis and other forms of autointoxication.

The employment of mammary extract in feminine debility, menstrual backache, uterine hemorrhage and fibroids has as yet given but uncertain results, a condition similar to that encountered in the treatment of hypertrophic conditions of the prostate by means of extract of the prostate gland.

The therapeutic value of ovarian extract seems largely undetermined as yet, although beneficial results are claimed by various observers in chlorosis, amenorrhea from diverse causes, untoward symptoms following oöphorectomy or the menopause, uterine hemorrhage, and, subcutaneously, in neurasthenia. In the male this substance acts as an aphrodisiac.

Brain extract, or cerebrin, is highly recommended by Lion in combination with the "bromid diet" in the treatment of epilepsy, by which the psychical manifestations are quickly subdued.

The extracts of bone marrow have become very popular in the treatment of both the primary and secondary anemias and various preparations have been made with glycerin from the bones of young animals which are given alone or in combination with nucleoalbuminate of iron with marked success. The dose is from 1 to 3 ounces daily.

The Treatment of Yellow Fever.

Holt (*Southern Practitioner*) states that every known energy and substance, excepting the x ray and radium have been tried in the quest of a specific for yellow fever without success, and to the skilled physician in this disease elimination must be considered the strongest defence.

Treatment should be begun certainly within the first twenty-four hours by the administration of 5 to 15 grains of calomel without bicarbonate of soda, given preferably in a teaspoonful of fine ice. This is followed in four hours by some active but mild purgative, such as castor oil, the infusion of senna manna and salts, or by a saline water, and if not exciting to the patient, an enema may be added. If the stomach contains a recent meal or substances difficult to digest an emetic is indicated prior to purgation. Elimination is to be further favored by the liberal administration of water, either plain

or as a light lemonade or Appolinaris, Vichy or Lithia. For high fever sponging with warm water is indicated, but cold or ice is never to be applied externally except in the case of actual or threatened gastric hemorrhage, when the ice-bag is guardedly used over the stomach. Phenacetin or acetanilid may also be given for the control of high fever in doses of 1 to 2 grains every two hours.

The calm stage following the storm of primary assault calls for absolute rest of all kinds and permits only of the mildest alimentation. Retention of urine should be watched for at this time and relieved by catheter. From the fourth to the ninth day nourishment is resumed accordingly as the tongue and oral mucous membrane have lost the appearance of acute erythema. Lack of caution in this matter, the giving of too much, or too rich, or any kind of solid food may precipitate a gastric hemorrhage or arouse an uncontrollable recurrent fever. A secondary fever on the third or fourth day denotes obstructed elimination, as a rule, and calls for a gentle but thorough purgation and enemata. As the evidences of acute inflammatory action subside nourishment may be begun with three or four teaspoonfuls of iced milk, with one-fourth of lime water, or milk and Vichy half and half, which may be repeated in an hour or two and increased in quantity the day following. This may then be alternated with a fine chicken broth cooked with rice or barley and strained. No preparation of beef is allowed by the author and fresh meat is interdicted for the convalescent during the remainder of the season. Caution must be observed also in alcoholic stimulation, although depression of the pulse below 50 usually calls for strychnia. The condition of uremia from kidney degeneration calls for no diuretic drugs in the hope of forcing function, and a free condition of the bowels and drinking of water or whey with seltzer or Vichy favors both elimination and nourishment.

The author speaks of the use of quinin and the introduction of purgatives and emetics only to condemn such procedures in the most forcible terms, together with the administration of perchlorid of iron in gastric hemorrhage. Throughout the disease rest and elimination are to be considered the essentials to a successful termination of the disease. In the matter of prognosis alcoholic subjects usually die and large meat eaters are to be considered the next liable to succumb.

Angina Pectoris.

The true etiology of angina pectoris has long remained a much discussed question. Very recently Russell (*British Medical Journal*, February 10, 1906) has presented a new theory. He attributes the act to an exaggeration of the normal abdominal reflex which sets up peripheral vasomotor spasm. In digestion this vasomotor spasm is normally present, but is increased by alcohol or by excess of proteid, and in certain individuals there is an abnormal sensitiveness by which it may be readily excited to an excessive degree. This abnormal sensitiveness may be induced by tobacco, alcohol, or by constant excess of proteid food and in those persons in whom it is present the spasm may be excited by slight strain, such as going upstairs or uphill, by emotion, or in some cases by simple palpation of epigastrium. The cardiac embarrassment may be due to debility of the heart muscle from anatomical changes, or to a temporary deficiency of the blood supply, Russell believes that the common factor in all cases is the hypersensitiveness of the vasomotor center. He is confident that tobacco, alcohol, and proteid food—excessive proteid food—are in a large degree responsible for the latter condition.

Russell has thus opened up a wide and important field for investigation. The dietetic principle becomes a very important factor in the prevention and treatment of angina pectoris.

The Early Diagnosis of Typhoid Fever.

Investigators are constantly trying to devise means and methods whereby the practitioner will be enabled to diagnose typhoid fever at the earliest possible moment. At present the serum reaction test is the most valuable bacteriological aid in the recognition of the disease. One of the principal disadvantages of this test is the fact that it does not become applicable until several days, or perhaps, a week after the onset of the disease. It has been found that the coagulation of the blood tends to prevent an earlier reaction. Very recently venesection has been employed in the hope of remedying the matter, but such a procedure can not be universally applied.

More recently Conradi (Edit. *British Medical Journal*, February 10, 1906) has attempted to prevent the coagulation and preserve the blood in a fluid condition so as to avoid the disinfectant action of those

substances which become active as a result of coagulation, by adding ox-bile combined with peptone, 10 per cent, and glycerine 10 per cent. Conradi prefers this medium of ox-bile, peptone and glycerine and places from 2 to 3 cm. in a small test tube. He then pricks the lobe of the ear and by means of a capillary pipette containing a small quantity of bile fluid, he transfers the exuded blood into the test tube. The proportion of blood added to the latter must be as 1 to 3. The tube is then incubated at 37°C. for from ten to sixteen hours, and cultures are then made from this material on agar plates prepared according to the Drigalski-Conradi formula. A diagnosis is possible in from twenty-six to thirty hours.

Pleural Effusions in Children.

This subject was recently extensively discussed at a meeting of the London Society for the Study of Diseases in Children.

Dr. Emanuel remarked that serous are four times as common as purulent effusions in adults, but in children they occur in practically equal numbers. Dr. Carpenter said that of 190 cases of pleurisy with effusion under his care, 114 were males and 76 were females; the fibrinous forms numbered 85, the purulent 105.

Seventy-five per cent of empyemata are pneumococcal, and these may be either primary or secondary. There is no essential difference bacteriologically between serous and purulent pleurisy.

According to Mummery, empyemata in children could be conveniently divided into two classes: 1, Those in which the infection is pneumococcal, and, 2, those in which a mixed, septic or tuberculous infection exists. In the former simple incision with drainage is all that is necessary.

This leads one naturally to inquire if by bacteriologic or cytodiagnostic procedures some indication for simple incision or rib resection may not be discovered on more careful investigation. As yet, nothing more than the general rule, that the preponderance of lymphocytes indicates a tuberculous infection, according to the suggestion of Widal, can be inferred from a microscopical examination. A study of the bacteriology and surgical treatment may reveal some interesting results.

Bythell, however, in discussing the clinical aspects of the bacteriology, opposed the prevalent idea that empyema due to the pneumo-

coccus is mild in character, the truth is that pneumococcus infections of the pleura may be very severe. He reported four cases of streptococcal infections which were comparatively mild in character.

Recent investigations on the pneumococcus and streptococcus accentuate the difficulty of distinguishing between these bacteria, and it is possible that a pneumococcus infection may be mistaken for a streptococcus infection and vice versa. The bacillus coli was found in rare cases. Other pyogenic bacteria are also occasionally discovered.

The Diagnosis of Pleural Effusions.

A common clinical type is that with physical signs of consolidation of the upper or upper and middle lobes, with deficient, very rarely absent, vesicular murmur over the lower lobe. In another type the chest may be dull from apex to base, with good but *distant vesicular* breath sounds, or *distant tubular* breathing, perhaps, heard on a deep breath only, and then only expiratory; or distant vesicular breath sounds with moist rales. With this extreme effusion there may be apical resonance or hyperresonance, the breathing clear and distinct, expiration prolonged and unduly audible compared with inspiration. A sector-shaped area of resonance may be obtained over the root of the lung and its immediate neighborhood. In another type there is dullness over the lower lobe, and deficient entry of air. Sometimes the breath sounds are distinctly tubular.

In either case there may be loud tubular breathing at the upper limits of dullness with friction sounds or not, sometimes with friction sounds alone, sometimes with pneumonic crackles only. Skodaic resonance can not infrequently be obtained in front over the corresponding apex, above the clavicle, below it, in both situations and sometimes behind. Skodaic resonance is also observed in basic consolidation and sometimes in apical. On the healthy sides the breath sounds are extra puerile.

Percussion gives fluid dullness and fluid resistance, but both may be encountered over a solid lung. Because the dullness is not of fluid character, it does not follow that no fluid is present. The note may be that of deficient resonance, and occasionally stomach resonance is obtained as far as the angle of the scapula. Percussion should be

light. Bronchophony contraindicates fluid. A thickened pleura may give the signs of fluid in the chest.

Displacement of the cardiac impulse is a most important guide in forming a diagnosis. In regard to the position occupied by the heart in such cases, in one autopsy on a child of six the organ was found vertically in the middle line of the body and the pericardium partially adherent to it. In another, a child of four, the heart lay more to the left of the sternum, but chiefly behind it. In another, aged 3 years, the mediastinal contents were shifted to the right without cardiac rotation. In another, right sided effusion, aged 10 months, the heart was displaced to the left.

Obliteration or bulging of the interspaces happens occasionally, and is best seen by viewing the chest from above. Rarely there is fluctuation, sometimes there is edema. Increase in cutaneous thickness may be determined by pinching the skin and comparing it with the opposite side. In a female of four with empyema the chest was uniformly bulged forward from the clavicle to just below the nipple, and the sterno-clavicular joint was loosened and the overlying skin was edematous. In a male of three there was marked localized bulging of the lower ribs of the right; in a boy of seven there was a fluctuating swelling over the front of the left fifth, sixth and seventh ribs; in a girl of six it formed over the left fourth, fifth and sixth ribs; in a boy of three perforation occurred at the seventh left interspace in the nipple line, with commencing subcutaneous abscess; and a boy of nine had an elastic fluctuating prominence over the right hypochondriac region, none of these pulsated.

Puffiness of the face and eyelids were seen in some cases. Only one of the patients had clubbing of the fingers and toes, a child of six, who had been ill for two years, and from whose chest he evacuated five ounces of pus.

Temperature as a diagnostic sign between pus and serum he regarded as worthless; it might be high with serum and normal with pus. The fact that the effusion follows an exanthem, that it is associated with diarrhea, sweating, and a sallow complexion, marked wasting, and an obviously low state of health are in favor of pus. Exploration is alone reliable.—Carpenter, *British Medical Journal, Children Diseases*, January, 1906.

Septicemia From Bacillus Coll.

In thinking of blood poisoning we almost invariably retain the idea that some pyogenic cocci are swarming in the blood stream. But the subject is by no means so simple. Typhoid fever is usually a septicemia and pneumonia in a large proportion of cases must be placed in the same class. Gonococci have recently been found to produce "blood poisoning." Moorehead (*Practitioner*) concludes that the existence of a bacillus coli septicemia is probable. We have a coli peritonitis, and now we must add a coli septicemia. The author mentioned points out that the colon bacillus has marked pathogenic properties at times, and septicemia in animals may be readily induced by this bacterium. The bacillus has been found in the blood during life, and many cases of general sepsis have been reported in which the bacillus coli was isolated in pure culture after death from various parts of the body. He admits, however, that its virulence is very much enhanced by the activity of other micro-organisms.

The Gruber-Widal reaction should be used as a diagnostic measure in obscure cases; agglutination of the colon bacillus should be expected in a septic infection by this micro organism.

Mucous Colitis.

Is it not remarkable that no two authors agree on the treatment of this intractable condition? Some recommend a bland unirritating diet, others find a coarse vegetable diet more efficacious in removing the obstinate constipation. Thus, Hare states that green vegetables and fatty foods should not be allowed, while Von Noorden recommends these very articles of food. Wilson believed a rheumatic element exists in these cases which must be fought with salicylates. Langehagen found intestinal lavage of great benefit, a treatment which has been severely criticised, and Hare also recommend a solution of salphocarbolate of zinc for irrigation of the bowel. Methylen blue has cured a case.

Recently MacDonald (*Wisconsin Medical Journal*, October) has written on this subject and added certain methods of treatment. We quote:

"In the local treatment it should first be determined that the

colon is free from retained fecal masses. This is accomplished by warm, high enemata of cottonseed oil, followed by warm water, and repeated on two or three successive days. This should be followed in most instances by medicated enemata used through a long Wales bougie of suitable size, preceded by enough normal salt solution to clear out the lower bowel. Salt solution is advised since it is much less irritating to a sensitive mucous surface and less likely to produce griping. These medicated enemata should be used daily, preferably on retiring, the patient lying supine with his hips elevated or in Sim's position, and allowing the fluid to run into the bowel slowly, with the object of having it retained if possible.

"Many remedies have been used for the purpose. From long contact with several aggravated cases, the writer believes his best results have been obtained from krameria, used in the proportion of one ounce of the fluid extract to a pint of water.

"Internally, one of the best remedies will be found in ichthyol, a convenient preparation of which is ichthyol albuminate, marketed as ichthalbin. This remedy should be used in 5- to 10-grain doses, three times daily. Salol is also a valuable remedy, though less so than the one just mentioned. The writer believes ergot to be a valuable agent in these cases, used in conjunction with those mentioned, on account of the apparent improvement in tone of the general circulation.

"Properly regulated exercise, together with the usual hygienic regulations, and freedom from outside depressing influences must not be neglected."

Treatment of Scabies.

Scabies is now considered a rare disease, but epidemics will appear often and the traveling man often infects his family. The disease is, therefore, overlooked and called popular urticaria or eczema until its persistence or contagious character corrects the error. The old sulphur treatment is still popular and probably as effective as any other. A certain rule must be followed in all cases in order to prevent relapses. The clothing must be removed and thoroughly disinfected. The bedding may serve to reinfect. The preparation of skin for treatment is often overlooked. A prolonged hot bath followed by a brisk rubbing to open the burrows gives the parasiticide a better opportunity to destroy the itch mite.

Schiller (*Wisconsin Medical Journal*, October, 1905) gives a good review of the treatment. After stating that the classical remedy of scabies—sulphur, is being replaced by other drugs, and calling at-

tention to the various modifications of the sulphur ointment which have been devised to aid its parasitic power or obviate its irritating qualities he recalls that Sherwell, in 1899, advocated the use of sulphur in powder form, which is rubbed into the skin every other night for a week. This is a simple and unirritating way to use sulphur. He continues :

"In 1883 Kaposi introduced a new remedy in the treatment of scabies. In place of the sulphur and tar of Wilkinson's ointment he substituted beta naphthol, which he claimed was not open to the objection of producing dermatitis in a certain number of cases, but that, on the contrary, it had the happy effect of diminishing any secondary dermatosis. His claims have certainly been verified. The formula of this preparation which goes by the name of compound naphthol ointment of Kaposi is originally as follows :

"Beta Naphthol, 15 parts, prepared chalk 10 parts, green soap 50 parts, lard 100 parts. In children or persons with a very delicate skin, the strength of the ointment can be reduced, and the green soap can be entirely omitted in young children.

"One application of Kaposi's ointment if thoroughly made, those parts inaccessible to the patient like the back being rubbed by some assistant, ought to suffice in most cases, but two or three applications can be made with impunity, the only unpleasant feature being the burning produced by the application, which usually lasts about fifteen minutes.

"The itching of the skin will not disappear immediately after the completion of the cure owing to the irritated condition of the skin usually present if the disease has existed for any length of time. This irritation does not amount to an actual dermatitis as a rule, and subsides in the course of a few days under appropriate treatment. In some nervous individuals the itching may be more persistent without there being any apparent cutaneous lesions, and these patients become quite despondent. In order to mitigate this post-scabetic condition, we may have recourse to alkaline baths or lotions, or to some other antipruritic lotions of which we have quite a profusion."

Making Scientists, Not Practitioners.

The criticism often passed by practicing physicians on some of our medical schools, that they are making scientists, not practitioners, is answered in a splendid article by Barker (*Boston Med. and Surg. Jour.*, September 21, 1905). He comprehensively relates what science and scientific methods have done for practical medicine and points

out the possibilities of the future. The danger of teaching merely the art of experimentation is duly recognized. We quote :

"It has sometimes been argued that the scientific physician is more at a loss what to do at the bedside of a patient than is the empirical physician. The empiricist is never embarrassed; if one remedy doesn't work, he tries another, and so on. He is often very popular with his patients, for the belief is very common among the laity that medicine has a remedy for every ailment, and that the only difficulty is to lay hands on the right one; a patient will often prefer almost anything to nothing in the way of treatment, and the empiricist has always something to recommend. A scientific physiologist or pathologist, who is not also trained as a clinician, would undoubtedly be embarrassed at the bedside of a patient both in making a diagnosis and in advising treatment. The scientific physician must, therefore, be as well educated on the clinical side as he is in physiology and pathology. Though he sets up as his ideal the establishment of a therapy based on physiology, he will not, when the physiological basis is wanting, withhold a remedy which empirical experience has proven useful. In every science parts remain in the empirical state, while other parts become well founded through experiment. In medicine most of our therapeutic measures are as yet empirical and only a few have a physiological or well-grounded experimental basis. Scientific medicine includes empirical medicine as well as experimental medicine, and the scientific physician differs from the empiricist, not in any limitation of resource, but in that he is unwilling to work without continually struggling to pass out of the obscurities of empiricism into light.

"An unintentional obstacle to the advance of the scientific method in medicine is to be found I believe in the attitude of some of the representatives of the fundamental sciences of anatomy, physiology and pathology. They sometimes express the opinion that diagnosis, prognosis and therapy are not sciences, but only applications of science, by which they mean that all the clinical man can do is to make applications to his work of the sciences of anatomy, physiology and pathology. This is an old fallacy and it has many analogies. The fallacy lies in the definition of science."

He pronounces the denial of diagnosis and therapy to the rank of science as an invidious distinction "which smacks" of the old aristocracy of learning. The method of science, however, is the best that the practitioner can use, and warns against ranging ourselves on the side of medical tact, medical personality, and other antiscientific, undefinable and non-examinable gifts, which the enemies of science use in argumentation.

SURGICAL DIGEST.

Leukocyte Count in Appendicitis.

Gros (*New York Medical Journal*) considers the leukocyte count of more value in diagnosis than either pulse or temperature and that a persistently high leukocyte count even with a low pulse and almost normal temperature is an almost invariable sign of pus. An ordinary acute case of appendicitis seen on the second day may present a leukocytosis of from 18,000 to 20,000 indicating a rather severe catarrhal condition of the appendix. If the number should reach 25,000 to 30,000 it would indicate that the peritoneum was somewhat seriously affected and if in a few hours 35,000 or over should be shown immediate operation would be indicated. On the other hand where the count falls from 21,000 to 22,000 or 23,000 it is a very good omen, though the pulse and temperature are rather disquieting. In a mild case the leukocytes do not exceed 15,000 to 16,000 per cm. and this falls to normal in a few days. The danger-zone is 25,000 and over and 35,000 to 40,000 is almost a sure indication of pus.

X-Ray Treatment of Malignant Growths.

W. B. Coley (*Annals of Surgery*) presents conclusions drawn from three years' work in this line comprising as a base for statistics 176 cases; 68 cases of sarcoma, 36 of sarcoma of the breast; 44 of epithelioma of the head, face and neck; 14 of deep-seated abdominal growths; 5 unclassified; 3 tubercular glands of neck; 3 of lupus, also 3 of Hodgkin's disease. According to Coley, the results of x-ray treatment of malignant growths up to the present time have proven:

1. That the x-ray exerts a powerful influence upon cancer cells of all varieties, but most markedly in cases of cutaneous cancer.
2. In some cases, chiefly in superficial epithelioma the entire tumor may disappear, probably by reason of fatty degeneration of the tumor cells with subsequent absorption.
3. In a much smaller number of cases of deep-seated tumors, chiefly cancer of the breast and glandular sarcoma, tumors have disappeared under prolonged x-ray treatment. In nearly every one of

these cases, however, that has been carefully traced to final result, there has been a local or general return of the disease within a few months or two years.

4. In view of this practically constant tendency to early recurrence, furthermore in the absence of any reported cases well beyond three years, the method should never be used except in inoperable cases, or as a prophylactic after operation as a possible, though not yet proven, means of avoiding recurrence.

5 The use of the x-ray as a pre-operative measure, except in cutaneous cancer is contraindicated: 1, because the agent has not yet proven to be curative; 2, because of serious risks of an extension of the disease to inaccessible glands as to other regions by metastases during the period required for a trial of the x-ray.

The above conclusions, coinciding as they do with several other observers corroborate the view that cancer is a strictly surgical disease.

Radical Treatment of Cancer of the Rectum. 1

Hartwall (*Ans. of Surg.*) advocates particularly a preliminary inguinal colostomy in these cases, in which, both anatomical and functional difficulties render eradication a formidable procedure. The author gives a study of 46 cases operated upon by 17 different surgeons of New York City, 6 being the author's own cases. Two cardinal operative principles are impressed by this study:

1. That cancer be cured only when it is attacked in an early stage.

2. Cancer can be cured by operation only when the growth itself is removed in its entirety, and with all the surrounding cancer-bearing tissue and the lymphatic glands draining these regions.

With regard to early diagnosis the average period which elapsed from the appearance of symptoms which might have led to a diagnosis to the time when a diagnosis was actually made was about nine months, the shortest being one week, the longest two years. The reasons for this tardiness are, that the early symptoms are in no way characteristic and the growth usually occurs so high in the bowel as to give no external manifestation. In nearly every case pain and bleeding from the rectum were the initial symptoms.

In only one-third of the cases was a cachexia present, even at

the time of operating. These difficulties call to mind the principle that Mayo has declared regarding pyloric cancer—that to be successfully treated it must be attacked before a positive diagnosis can be made in any less radical way than by an exploratory laparotomy, so that he operates when there are good grounds for suspecting the disease. The diagnosis by examination of the rectum for cancer is not such a formidable procedure and may be accomplished without anesthesia. The old-established age-limit for cancer is no longer tenable, youth being no guarantee against the disease. Bearing in mind these facts, it should be an imperative rule, to examine carefully the rectum of every patient suffering from lower bowel trouble at least digitally if not with the proctoscope.

While early diagnosis is a matter of some difficulty the complete eradication of the diseased tissues is more difficult for the main reasons:

1. The liability to sepsis is great and the operation dangerous on account of the anatomical and functional conditions of the rectum.
2. The destruction of the rectum and anus to such a degree as is necessary in these cases is a serious matter for the patient.

The mortality in this series was 26 per cent, *i.e.*, 12 cases died as a direct result of the operation, 7 dying from sepsis.

Hupp in an analysis of 881 cases gives a mortality of 19.4 per cent and of 171 fatal cases, 83 or almost one-half died from sepsis. Statistics now show only 15 to 20 per cent of cures from operation. To increase this record important factors must be considered: First, early diagnosis; second, elimination of sepsis. The main cause of sepsis is, of course, fecal contamination during or subsequent to the operation. The author is strongly of the opinion that this complication can best be avoided by completely deflecting the fecal current by an inguinal colostomy; also, a preliminary treatment should be instituted for a week or more prior to operation for the purpose of getting the bowel in good condition and the rectum as free possible from purulent discharge. The writer believes that the best results are obtainable in these cases only by a removal of the rectum from well above the growth to, and including the anal orifice, along with the lymphatic glands draining this area. The ideal operation, *i.e.*, retaining the normal sphincters is out of the question, for four reasons:

1. In the majority of cases the growth encroaches on the sphinc-

ters to such an extent that they can not be spared without danger of recurrence. In the majority of cases a safe zone distal to the growth does not exist.

2. According to Gurata the lymphatics draining the rectum are divided into four groups: *a*, anal skin; *b*, the intermediate anal; *c*, the columnæ anal; *d*, the group draining the rectum proper, of these, group *a*, the anal skin drains both outward toward the thigh and inguinal glands and upward into group *c*. A thorough elimination of these groups necessitate a sacrifice of the sphincters.

3. The desire to save the sphincters often tempts the surgeon to leave more of the gut than his best judgment dictates.

4. An end to end anastomosis leaves scar-tissue with a certain amount of construction which strongly predisposes to recurrence which statistics shows almost without exception occurs locally.

Two methods have been made use of as substitutes for anal sphincters—one the sacral or perineal and the other the inguinal. The author is strongly in favor of the latter method as it renders the mortality through sepsis much less by pre-establishment of the artificial anus. The method of colostomy best adapted to this operation is through an intermuscular incision to the left of the left rectum through which the sigmoid is drawn and divided between two ligatures, the distal end being dropped back into the pelvis. An incision is then made through the linea alba at the same level and the anterior rectal sheath raised up from the muscle. The proximal end of the gut with its mesentery is drawn under this sheath and fastened to the skin and fascia in the median line. Three weeks later the radical operation is done.

House Maid's Knee.

Chronic prepatellar bursitis is often a very troublesome affection and various means have been devised to cure it. The ordinary stimulation ointments are very rarely efficacious and surgical treatment must usually be employed:

“In the mild form of chronic bursitis the fluid may be aspirated and the bursa filled with a 3 to 5 per cent carbolic acid solution, washing the latter out with sterile water and then applying a posterior splint and compression.”—Young.

If this fails most orthopedic surgeons advise the operation of re-

moving the sac entire. A thorough dissection of the sac from the surrounding structures is thought to be the only safe cure in severe forms. Occasionally other means may heal, as in a woman reported by Field (*British Med. Jour.*), who briefly gives the interesting details: The woman fell down stairs and heard the swelling go pop. She said there was no appreciable pain, and none at all afterward.

Probably the method advocated by Hoffman (*New York Medical Journal*, May 6, 1905) will be found most satisfactory:

"The operation consists of puncturing the bursa, thoroughly scarifying its walls, expressing its fluid contents, bringing its walls in contact and holding them so by means of a compress until their raw surfaces have grown together and have thus obliterated the cavity.

"An ordinary tenotome, having a long shank, or the especially devised instrument illustrated in Fig. 5, is passed into the distended bursa at its base. With the sharp edge its entire inner surface is marked with many fine cuts, after which the instrument is withdrawn and the bursa evacuated of its fluid contents through the small skin incision. A thick, wide pad of gauze is placed over the bursa and firmly bound with strips of adhesive plaster, overlapping one another and completely encircling the limb from an inch or two above the upper margin to the same distance below the lower margin of the bursa. Over this a muslin and a crinoline bandage are applied. A pad of cotton should be placed within the popliteal space, beneath the plaster, to protect the prominent hamstring tendons and overlying skin from undue pressure. The raw bursal surfaces should be kept in contact until firm union has occurred. Two weeks are sufficient. The adhesive plaster strips should be renewed or reinforced whenever they appear loose; as a rule, every two or three days.

"No anesthetic need be given, as the operation is practically free from pain, except that produced by puncturing the skin. The bursal lining is not very sensitive and the scarifying gives little distress unless the shank of the instrument is rubbed too hard against the wound margin at the point of its entrance through the skin. Patients have frequently expressed surprise at the lack of discomfort during operation. The patient need not be confined to bed or even use crutches during the after treatment, but may attend to almost any tasks, except such as require kneeling, immediately after operation.

"To illustrate: One of my first operations was performed upon a newspaper carrier, who had a chronic enlargement of the prepatellar bursa. He entered the clinic carrying his bundle of papers; the limb was immediately scrubbed with soap and washed with an antiseptic solution, the operation performed, the dressing applied, and, in less than an hour and a half after entering the operating room, the patient

was distributing his papers, free from pain, and with only such slight lameness as was caused by the tight bandage restricting motion at the knee. So, too, during my service at St. John's Hospital, I operated successfully upon two young women employed there for heavy housework. Neither lost a day's time, but both attended to all their usual duties, except such as required kneeling, and suffered little inconvenience. These histories are typical and not selected as exceptional.

"I have frequently employed this operation in the treatment of distended popliteal and other bursæ, but not with the uniform good results experienced in the treatment of housemaid's knee.

"Ideal compression can be made over the anterior knee bursa, which overlies the patella. Not so, however, over popliteal bursæ, which are deeply situated and do not rest upon a smooth, hard surface, such as presented by the patella. Nevertheless, in a number of cases of chronic popliteal bursitis, which would otherwise have been subjected to excision, a cure has been effected by this method."

The Treatment of General Peritonitis.

"In the treatment general peritonitis, surgeons are not by any means agreed as to the important points," writes McCosh (*Medical News*, November 4, 1905). The divergence of opinion has not been in the least lessened in recent years, especially since it is known that the peritoneum can absorb and destroy, to a great extent, the poison generated by bacteria. The necessity of operation, therefore, is less certain.

There should be no one rule of treatment; it should vary according to the etiology, duration and severity of the disease and to the resistance of the patient:

"One of the most important and burning surgical problems of the day concerns the propriety of operation upon all (except moribund) cases of general septic peritonitis. Shall operation be the universal rule, or shall it be employed in selected cases only, or shall it be practically rejected? These are the three most important questions for our discussion. It may be fairly stated that the majority of surgeons favor an affirmative answer to the first of these questions, and, as a rule, recommend immediate operation. A fair minority would, perhaps, agree to the second proposal and select according to their judgment certain cases for immediate operation and others for non-operation or at least delayed operation. A small minority, including, however, some able and experienced surgeons, would rather agree to the

third proposal and reject immediate operation in practically all cases. It is mere waste of time to discuss the views of a few surgeons, who teach that these cases are practically hopeless whatever may be the treatment. For further elucidation it may be convenient to divide these cases into two categories.

" 1. Patients in desperate or moribund condition. The pulse is small and feeble, generally very rapid, 130-140; the facies have a most distressed and anxious appearance; vomiting is almost constant. The abdomen is enormously distended and hard as a blown-up football; respiration is rapid, distressing and shallow; the extremities are bluish; often there is a semigangreous odor emanating from the patient's body. The mind, even in the most desperate of these cases, is often clear, and the eyes bright. The prognosis in this class of patients is practically hopeless; death will end their sufferings within twenty four hours; operation is contraindicated. It will but hasten the fatal result, and is apt to bring discredit upon surgery.

" 2. The patients are critically ill, but not moribund. The heart's action is feeble and generally very rapid, but the circulation is not yet hopelessly impaired. Vomiting is frequent, and the abdomen is markedly distended and hard, but is not of the football variety. Respiration is less distressing, and the appearance of the patient is less critical. In this class of cases the majority of surgeons favor immediate operation. They claim that without operative interference such cases are almost invariably hopeless, while if operated upon, the percentage of recoveries will be from 30 per cent to 60 per cent, or even 80 per cent. On the other hand, certain surgeons claim that the chances for recovery are better if the operation be postponed. These men maintain that their mortality since the practice of immediate operation has been abandoned, has been distinctly reduced, indeed, as much as 50 per cent "

A few years ago Dr. McCosh belonged to the first of these classes, but now, he carefully chooses operation for some cases and rejects it for others. It is remarkable how some of the radical surgeons are stepping back into the ranks of the conservative operators.

After an exhaustive description of the technic in operating on these cases, he concludes as follows:

" 1. No one plan of treatment is applicable for all cases.

" 2. The majority of cases are best treated by operation, but there are also many cases where operation diminishes the chances for recovery.

" 3. Undoubted cases of general peritonitis recover without operation.

"4. Rapidity, gentleness and removal of the cause are the most important features of the successful operation.

"5. Irrigation with saline solution is generally recommended. All chemicals and mechanical irritants are to be avoided.

"6. Drainage should be provided, but the drains should be smooth, non-adhesive and of small diameter. The cigarette drain is preferred.

"7. Enterostomy is not advocated.

"8 Gauze packing is injurious.

"9. Fowler's position after operation is most advantageous."

Pyloric Stenosis of Infancy.

Although more than a century has elapsed since Beardsley so accurately described his historic first case of obstruction at the pylorus occurring in infancy, the etiology remains an unsolved problem. During the past few years the subject has been accorded considerable attention by American pediatricists and surgeons, hence a few vague points concerning the pathology, symptomatology, and treatment have been elucidated.

Nicoll regards the condition due to a primary congenital overgrowth of the sphincter muscle, while Thomas believes the hypertrophy to be secondary to an incoördinated action of the stomach muscles, dependent on functional disorder of the gastric nervous system, resulting in gastric spasm. Pfaundler advances the theory that the hypertrophy is due to a spasmodic contraction because of gastric irritation after birth. Scudder says :

"We may accept as true the evidence of the existence at birth of hyperplasia of the pyloric sphincter. I think also that from clinical evidence we may accept as true the fact that after birth there is often, if not always, a spasmodic contraction of this hypertrophied pylorus. More than this we can not accept on the present evidence. I think that the term 'pyloric stenosis of infancy' implies nothing not yet proven."

Up to the present time more than fifty of the cases of pyloric stenosis of infancy have been subjected to postmortem examination. The findings have been fairly constant—in fact, except for minor differences of degree, invariable : A hard pyloric tumor, of constant structure, and a hypertrophied or dilated stomach ; occasionally a dilated esophagus ; a narrowing of the pyloric lumen ; a hypertrophy of the

mucous membrane, and a collapsed intestine. In all of the cases coming to autopsy, as well as in those which have been operated upon, a lesion causing at the pylorus more or less complete obstruction to the normal emptying of the stomach contents has been found. It is worthy of mention that even though a solid steel sound will pass through the pylorus with comparative ease, yet fluid can not always be made to pass. The swollen and reduplicated mucous membrane obstructs the lumen; these folds are smoothed away by the sound. The essential pathologic change in this affection is an enormous hyperplasia of the circular muscle fibers of the pylorus and of the adjoining stomach wall.

It is quite evident that the severity of the symptoms will depend quite materially upon the degree of the stenosis at the pylorus. The most constant symptoms are vomiting, constipation, progressive emaciation, visible gastric peristalsis, the presence of a pyloric tumor, and latterly a dilated stomach. It is true that a dilated stomach is not always present. Concerning vomiting, which is almost invariably the first symptom noted, Still says:

"I have never seen a case where the vomiting began later than the seventh week. Vomiting is never proof *per se* that an infant has congenital hypertrophy of the pylorus. The vomiting has: 1, a forcible character, it may come through the nostrils; 2, may occur in an infant who has been carefully fed; 3, it persists in spite of such attention of feeding and such general treatment as will usually control the vomiting of dyspeptic conditions, and 4, its large quantity shows that the vomit represents more than one feed, perhaps, the accumulation of several feeds in the dilated stomach."

Vomiting begins the day of birth or the following day, or is delayed a few days or perhaps, weeks. In 52 cases collected by Scudder the average time was 17 days. Scudder says:

"Vomiting is primarily uninfluenced, by the quality of the food. It is influenced, however, somewhat, by the quantity of the food. It occurs usually immediately after a feeding or within a half-hour. It may be one feeding. The material vomited may be liquid or curdled milk. It usually contains no bile. The presence of HCl in the vomitus is variable. Blood has never been vomited in any recorded case. There is no evidence of nausea."

Saunders observed a case in which bile was present in the vomitus. Schwyzer has also recorded a case. Saunders says:

"The misleading symptom in this case was the presence of bile in the vomitus. It is evident that the violent contraction of the abdominal muscles during emesis may force a small quantity of fluid in testinal content into the stomach."

Constipation is not always present. Nicoll observed a case in which the patient had a diarrhea. Hirschprung, and others have recorded similar observations. Still says :

"The association of constipation with persistent vomiting is of importance in diagnosis. In these cases the patient should always be examined for congenital pyloric stenosis."

Emaciation may be the symptom attracting the most attention. The loss of weight is progressive. In one of Nicoll's cases the emaciation was not so prominent. The infant is inordinately hungry. Scudder says :

"The child is ravenous, and is pacified temporarily by food, only to show signs of distress when the contractions of the stomach empty the contents after feeding. The eagerness of the child for food is remarkable."

Still considers visible peristalsis of the stomach, and palpable thickening of the pylorus, to be the two characteristic signs of congenital hypertrophy of the pylorus. He calls attention to the fact, however, that these two signs are only present at intervals, so that cursory examination of the abdomen may result in overlooking the condition altogether. He says :

"The abdomen should be examined immediately after the infant has been fed, and it is well to watch the abdomen during the taking of food."

In discussing the subject Scudder says :

"These peristaltic waves are very noticeable at the beginning, and early in the course of the case. When the stomach is greatly dilated and when the muscular contraction is diminished in power, the peristaltic waves are less and less apparent."

The presence of a tumor clinches the diagnosis. In many cases a careful examination repeated at frequent intervals and at different periods will enable the practitioner to detect the presence of a tumor.

When we are called to see a patient only a few days or weeks after its birth, suffering with persistent, forcible vomiting, constipation and progressive emaciation, especially if the symptoms have not been relieved by careful feeding and such general treatment as will usually control the vomiting of dyspeptic conditions; and, if examination shows visible peristalsis of the stomach and palpable thickening of the pylorus, the diagnosis of stenosis of the pylorus in infancy should not only be suspected, but the practitioner should feel confident that it is the lesion which he has to deal. Still says:

"No doubt the diagnosis can be made with all but certainty from the visible, well-marked peristalsis of the stomach alone, but in every case the evidence should be clinched by feeling the thickened pylorus."

Holt and Rotch are confident that the peristaltic wave is not as constant or diagnostic as is generally supposed. Before a diagnosis is made every symptom must have been carefully considered and several thorough, painstaking examinations must have been made.

The prognosis depends somewhat upon the completeness of the obstruction and the general findings. Scudder, however, says:

"I very much doubt the permanence of the cure in cases treated medically. To withhold operative treatment after the diagnosis of pyloric obstruction has been made leaves the case practically hopeless, according to the evidence available."

Physicians are becoming more and more appreciative of the fact that many of the cases heretofore reported as cases of stenosis of the pylorus in infancy, are not in reality true cases of the disease.

Saunders believes that the treatment should be the use of some drug that will overcome the violent contraction of the pylorus; he recommends belladonna, bromids and chloral; opiates should not be used. For the secondary gastric irritation, the stagnated contents should be washed out and rectal feeding resorted to from time to time. The diet should consist of food which forms no coagulum in the stomach. Whey or peptonized food is usually the best food. The quantity of the food should not be large. The deficiency in fat should be supplied in cod liver oil, and a very small percentage of cream may be gradually added. If, in spite of rational treatment, the patient continues to fail, surgical intervention should be advised.

Personally, I believe that the treatment recommended by Dr. Saunders is to be highly commended. I feel confident that in those cases in which an inflamed, swollen mucosa acts as a contributing cause of the stenosis, the treatment advised by Dr. Saunders will be found quite valuable. In any instance the patient should be given the benefit of the doubt. I would urge, however, that these cases be brought to the surgeon before too late. I am convinced that in a large percentage of the cases, early surgical intervention offers practically the only hope. When the pylorus is very firm—some writers have described it as being “cartilaginous-like”—and completely obstructed, there can be no advantage in delay.

More than sixty four cases have come to operation, with more than thirty four recoveries. The trouble has been that patients have not been sent to the surgeon until operation was practically useless. Personally, I feel that Scudder is correct when he says:

“My feeling, then, with regard to the operative procedure to be used in case of infantile stenosis of the pylorus is that the posterior gastroenterostomy, without a loop, made as snug to the origin of the jejunum as is possible, has first choice.”

It seems unnecessary to say that these little sufferers should have the most careful postoperative attention.

E. A. BABLER.

YESTERDAY AND TODAY.

The Treatment of Recent Fractures of the Patella.

Our forefathers were fully appreciative of the disabling effects of fracture of the patella; they realized that the patient was not only in danger of remaining a cripple for life, but that the accident might result fatally. Sir Charles Bell observed a case in which death followed on the fourth day; the patient was a coachman who had fallen striking upon his patella.

In the early part of the Nineteenth Century, Baron Boyer treated cases of patellar fracture with quite good results. The technic employed was the following:

"A hollow wooden splint, long enough to reach from the middle of the thigh to below the calf, and sufficiently deep to embrace two-thirds of the thickness of the limb was prepared; the splint was broader above than below, and was lined with wool or other soft materials. On the outside of the edges of this splint, little round-headed pegs, or nails, were arranged, the use of which was for fixing the straps, which serve for holding the fragments of the bone in a state of approximation. These straps were two in number, rather more than an inch in width, and seven inches long. Their middle portions were quilted with wool, covered with chamois, and made of softer leather than their extremities which were of calf leather, and furnished with holes. The limb is to be placed in the concavity of the splint, the ham occupying its middle; and the empty spaces, left between the limb and apparatus, are to be nicely filled up with soft tow. Then, while an assistant presses the pieces of bone together, the straps are to be applied in such a way that the one which lies above the upper fragment of bone, is to be fastened to two of the pegs lower down; and that which crosses immediately under the lower fragment is to be fastened to the two pegs situated higher up."

Mr. Samuel Cooper employed compresses held in place by means of a roller bandage; he kept the limb elevated so that there would be fairly good opposition of the fragments. Sir Astley Cooper advocated the following:

"A leather strap should be buckled around the thigh, above the broken and elevated portion of bone, and from this circular piece of leather another strap is passed under the middle of the foot, the leg being extended, and the foot raised as much as possible. This strap is brought upon each side of the tibia and patella; and buckled to that which is fixed around the lower part of the thigh. The strap may be confined to the foot by a tape tied to it, and to the leg at any part in the same manner; and this is the most convenient bandage for the fractured patella, and for the patella dislocated upward by the laceration of its ligaments. A roller bandage is to be applied upon the leg."

These surgeons fully understood that the reason they secured fibrous union in these cases was due to their inability to perfectly coapt the fragments. At the present time the treatment of fracture of the patella depends somewhat upon the character of the fracture. If the parts can be readily approximated and kept in the latter position by means of a posterior splint and adhesive straps combined with elevation of the injured limb, then no operation is performed. In all

cases of tear fracture the indications for operation, according to Blake, consist in the extent of the injury to the lateral extensions of the quadriceps muscle. Blake has found that in all instances where these ligaments are torn, operation should be performed. He does not deem it advisable to delay the operation more than four or five days, since after that time the tissues begin to heal in abnormal relationship. The technic followed by Blake is as follows :

"A transverse incision, one cm. below the line of fracture, fully exposes the lacerated lateral ligaments. After clipping away the fringes of aponeurotic tissue about the surfaces of the patella, and washing out blood clots by means of a stream of sterile salt solution, a suture of strong chromicized catgut, No. 4 preferably, or a kangaroo tendon, is then introduced in the lateral patella ligament on each side of the patella by means of a full curved Hagedorn needle. (The needle is inserted one centimeter from the line of fracture and as close to one of the fragments as is possible, and brought out in the line of the tear just in front of the synovia; again introduced at a similar point at the margin of the opposite torn surface and hugging the other fragment it emerges one centimeter from the line of fracture on the anterior aspect of the lateral ligament). It is quite essential that the sutures should be placed as closely as possible to the fragments. The sutures are tightened simultaneously. Perfect coaptation is thus secured. The cutaneous wound is closed without drainage."

The after-treatment is the usual one. A molded plaster splint is put on, which is removed daily for massage after the fifteenth to the twentieth day. Excellent results have been secured by Dr. Blake.

E. A. BABLER

Tetanus.

Our knowledge concerning the etiology and treatment—especially the preventative treatment—of tetanus has been markedly advanced since the days of Cooper, Bell, and MacLagan. In discussing the subject, in the first quarter of the Nineteenth Century, Dr. MacLagan said :

"One of the most alarming consequences of wounds is tetanus. What produces these terrible symptoms we hardly know. In the West Indies, and in warmer climates, it is produced in an idiopathic form from exposure to the night air, especially during sleep; and most

probably by exhalation from the ground. Further, we know nothing of the nature of this complaint. (It will arise from lacerated wounds, and the exposure of tendinous parts; it will be produced by bruised nerves; but it will also be produced by slight abrasions of the skin or a puncture. It will come on at the period of cicatrization, rather than in the violence of inflammation. A kindly suppurating wound is least allied to it: and such a condition of the wound we often desire as most likely to put a stop to its violence). As the cases have been presented to me, my attention has not been called to premonitory symptoms, though such might have been observed; dejection, and an anxious expression or countenance, mark the commencement of the attack."

Today we all appreciate the fact that all forms of tetanus are produced by the tetanus bacillus, and the latter always gains entrance through some wound. The organisms produce a toxin which has a predilection for the nerves. It reaches the nervous centers through the axons of the peripheral nerves. It is thus obvious that MacLagan was correct in contending that a bruised or lacerated nerve increased the possibility of the development of tetanus.

Very recently Anders has stated that increased pulse rate without assignable cause; peculiar nerve irritation, etc., are frequently observed among the earliest clinical manifestations of the disease. Anders is a strong believer in the preventative treatment; he does not believe that tetanus can be cured. Rogers and others have, however, recorded successful cases.

Behring and Kitasato were the first to show the possibility of immunizing animals against tetanus infection. At present, an antitetanic antitoxin is on the market. The results obtained with the serum clearly indicate that the disease can be far more easily prevented than cured. Since the axons are the transmitters of the toxins, recent investigators have injected the serum into nerve sheaths and into the spinal cord. Injections into the brain have been made by a few. All agree that the best results to be obtained from the serum are secured when the latter is employed as a prophylactic.

I most heartily commend the line of treatment in all severe lacerations as followed by Dr. Carson. For several years Dr. Carson has taught his students that every patient suffering with a severely lacerated wound, or injuries in which it is probable or quite possible that the disease will or even may develop, the parts should be cleansed

most carefully and thoroughly, and an antiseptic dressing applied ; a prophylactic injection of antitetanic serum should be then administered. In reviewing the literature I have not found an instance in which tetanus developed after a prophylactic injection of the serum had been administered shortly after the accident.

Practitioners have become appreciative of the fact that tetanus can be prevented ; they realize that it is our duty to freely expose to its depth each and every puncture wound ; every wound must be thoroughly cleansed, and the proper dressing applied.

I would caution practitioners against the use of solutions of carbolic acid, as an antiseptic dressing, especially in treating affections situated about the fingers since I have observed two cases in the practice of my friends, in which gangrene followed its use.

We may then say that the ideal treatment of tetanus is the preventative treatment. After the disease presents, intraneural, intraspinal and if necessary intracranial injections of the serum should be administered. It is very essential that the principal nerves of the injured extremity be exposed under anesthesia and the serum injected freely and frequently.

Proper, early treatment will prevent practically every case of tetanus.

E. A. BABLER.

The Treatment of Punctured Wounds.

A punctured wound is frequently of more serious import than an incised one. Every country house-wife is fully appreciative of the complications which may follow an apparently insignificant punctured wound, hence, she applies the various household remedies as soon as possible. In the days of Dr. Gibson it was customary to treat these cases with poultices and to trust to good fortune for a successful outcome. That Gibson was not always successful in his treatment is evidenced when he says :

“ In a common punctured wound it is seldom necessary to do more than apply a soft poultice to the part for a day or two when the wound will heal without difficulty. But when the part swells, and evident indications of the formation of matter exists, an incision should be made to prevent its extension, and the orifice kept open by a tent or bougie. If nervous symptoms arise, denoting the approach of

tetanus the wound should be freely dilated, and stimulating substances immediately introduced. Opium should be exhibited in large and frequently repeated doses. Hemorrhage is seldom the consequence of a punctured wound, even if a large artery be pricked—the opening being too small for any quantity of blood to flow.”

At present we no longer treat punctured wounds in this, practically expectant, manner. We do not apply poultices and trust to good fortune for a successful issue. There is but *one* rational treatment and that *one* is to carefully cleanse the parts, make a free incision, exposing the injured tissues to its depth to the eye, then wash the parts thoroughly, introduce a small drain and apply a moist bichlorid pack to the parts. If the technic is carefully followed, tetanus will practically never follow. Gibson, perhaps, knew that if the parts would bleed freely the dangers of tetanus developing would be lessened. It is certainly far better to freely incise the parts at once, and then apply an antiseptic dressing, than to treat the expectant plan. (In passing, I would like to caution against the use of solutions of carbolic acid for moist dressings for the hands, especially the fingers, since gangrene not infrequently follows their use).

The present-day treatment of punctured wounds then, is early, free incision, followed by thorough cleansing of the parts and the application of a moist bichlorid dressing. It is the safest preventative against tetanus.

E. A. BABLER.

The Treatment of Large Ventral Herniæ.

The present-day treatment of large ventral herniæ is quite different from the technic advocated by Fayrer in the days of “laudable pus.” In the *Indian Medical Gazette*, for February, 1868, Hutchinson describes a case of large ventral hernia, situated about two inches above the umbilicus, treated after the method devised by Fayrer. He says :

“I first secured a broad, flat plug two inches broad and three-fourths of an inch thick, and fitted with aperatures for two ligatures. The sac of the hernia was then passed through the ring downward and outward, so as to avoid the umbilicus: it was then fixed with two ligatures, the needle being brought out in four different spots; the plug was then introduced and tied in, and a bandage passed over it. On the

fifth day, as the ligatures had fairly caused suppuration, the plug was satisfactorily removed; a pucker was presented in the abdominal integument, the size of an adult's mouth, and below it there was a great deal of thickening; a pad was put on and the patient kept on her back. Strange sequellæ followed; the walls of the invagination, without being made raw or scarified, adhered firmly and the pucker rapidly contracted until it appeared into a small oval, of one inch by one-half of an inch."

The cause of the favorable results in the case is quite obvious. At the present time we know that the chief supporting membranes of the abdominal parietes are the aponeuroses. We have found that careful and accurate approximation of the layers of the incised abdominal wall will almost invariably prevent postoperative hernia. When the ventral hernia is situated in the median line, and when it has the appearance of an umbilical hernia it is preferable to employ the efficient technic advocated by Mayo, which is as follows:

1. Transverse elliptical incisions are made surrounding the hernia; this is deepened to the base of the hernial protrusion.
2. The surfaces of the aponeurotic structures are carefully cleared two and a half to three inches in all directions from the neck of the sac.
3. The fibrous and peritoneal coverings of the hernia are divided in a circular manner at the neck, exposing its contents. If intestinal viscera are present, the adhesions are separated and restitution made. The contained omentum is ligated and removed with the entire sac of the hernia and without tedious dissection of the adherent portion of the omentum.
4. An incision is made through the aponeurotic and peritoneal structures of the ring extending one inch or less transversely to each side, and the peritoneum is separated from the under surface of the upper of the two flaps thus formed.
5. Beginning from two to two and one-half inches above the margins of the upper flap, three to four mattress sutures of silk or other permanent material are introduced, the loop firmly grasping the upper margin of the lower flap; sufficient traction is made on these sutures to enable peritoneal approximation with running suture of catgut. The mattress sutures are then drawn into position, sliding the entire lower flap into the pocket previously formed between the aponeurosis and the peritoneum.

6. The free margin of the upper flap is fixed by catgut sutures to the surface of the aponeurosis below, and the superficial incision is closed in the usual way. (A prominent St. Louis surgeon has originated a stitch which secures perfect overlapping without necessitating the introduction of so many sutures. He employs absorbable material).

In postoperative hernia the adherent parts must be carefully separated and the layers of the parietes accurately approximated. It is very essential that the surfaces of the fascia be clearly exposed before the incised margins are approximated.

E. A. BABLER.

Sciatica.

Leszynsky (*Med. Rec.*) holds that most of the cases assumed to be sciatic neuralgia are usually either a mild or a severe form of perineuritis or interstitial neuritis, and should be so designated, and others are symptomatic of interference with the nutrition of the nerve through some extrinsic cause. Sciatic pain occurs in all diseases of neighboring organs that are associated with compression of the sciatic nerve or the sacral plexus. Sciatica may result from fracture or dislocation of the thigh, ischiadic hernia, neuroma, aneurism of the popliteal artery, tight shoes, or flatfeet. In many instances it is a local manifestation of a general toxemia. Rarely observed as a result of toxemia from lead or mercury. When sciatica is due to cold it develops rapidly. Cases that develop slowly are often either symptomatic or intrapelvic disease, or are due to some form of external pressure, or are secondary to inflammation of adjacent structures. Signs of neuritis vary in degree in every case. In many instances, especially in women, rectal and pelvic examination are absolutely essential. The cause must be ascertained before the treatment can be applied in a scientific manner. In acute cases the pain must be relieved as soon as possible. Keep the patient at rest with or without fixation of the extremity by means of a long splint. Wet hot packs to the affected limb. Hot saline enemata are valuable. The hot irrigation must be continued for forty minutes and may be repeated three or four times a day. Morphine suppositories may be necessary, and the bowels must be kept empty. Too vigorous massage will increase the severity of the pain. Superficial linear cauterization with the Pacquin cautery along the

course of the nerve and over the sacral region is often valuable in relieving pain. At the end of the first week the continuous galvanic current will often be found valuable. Large electrodes, 4x6.5 inches, are necessary.

In mild cases the writer employs hot water cloths followed by massage and rectal irrigation. In subacute and chronic cases drugs are of no value. He has often employed the "rest cure." Daily massage with passive movements and regulated systemic exercise, together with occasional passive extension of the limb are advocated in chronic cases. The writer uses the leg of a pair of drawers dipped in water at 65°F. which he places upon the patient's limb like a stocking. A roller bandage is then applied. When the patient arises the next morning it is removed. The limb is then bathed in warm water and massaged.

BOOK REVIEWS.

Man and His Poisons.

A Practical Exposition of the Causes, Symptoms and Treatment of Selfpoisoning. By Albert Abrams, M.D., Consulting Physician to the Denver National Hospital for Consumptives; the Mount Zion and the French Hospitals, San Francisco; President of the Emanuel Sisterhood Polyclinic, etc. Cloth, \$1.50, net. E. B. Treat & Co., New York

In this small book the author has given us a very clear exposition of autointoxication, while he occasionally treats of some scientific problems in a way which leads the reader to believe they have been definitely settled although they are still only partly understood, yet, taken all in all, the book is good reading matter.

Worth special mention are the chapters on the idiopathy and treatment of intestinal selfpoisoning by the sinusoidal current.

The bibliography shows that 123 articles have been consulted and quoted from, besides the author has done considerable original research work in the way of experiments and demonstrations.

Neurotic Disorders of Childhood,

Including a Study of Auto- and Intestinal Intoxications Chronic Anemia, Fever, Eclampsia, Epilepsy, Migraine, Chorea, Hysteria, Asthma, etc. By B. K. Rachford, M.D., Professor of Diseases of Children, Medical College of Ohio, University of Cincinnati; Pediatricist to the Cincinnati Good Samaritan and Jewish Hospitals; Member of the American Pediatric Society, etc. Cloth, \$2.50, net. E. B. Treat & Co., New York.

Part I of this book contains a revision of papers on Gastrointestinal Toxemia, Autointoxication, Chronic Systemic Bacterial Toxemia, published in the "Archives of Pediatrics." Part II deals with the individuals neuroses of childhood, and a study of this work will better help to the understanding of these diseases which are both common and little understood.

IN MEMORIAM.

ELISHA HALL GREGORY, M.D., LL.D.

"We are remembered by the good we do."

When the cold hand of death chilled the fevered brow and stilled the quickened, weary heart of our lamented friend, Dr. Elisha Hall Gregory, at Ormond, Florida, on Sunday, February the eleventh, 1906, it closed a very valuable and well-spent life, and it removed from civilized America, and especially from this city, one of the grandest, most faithful and illustrious men the Mississippi Valley has ever known. Dr. Gregory was indeed the grand old man of the Mississippi Valley; he was the Nestor of the medical profession in Missouri especially in St. Louis.

Dr. Gregory was born on the tenth day of September, 1824, in the little homestead near Russellville, Kentucky. He received his early education in the common schools of Hopkinsville, Kentucky. While yet in his teens his parents migrated to Boonville, Missouri, where the boy became closely associated with the late Dr. F. W. G. Thomas. When seventeen years of age he became associated with a printery, but studied medicine from borrowed books at the same time. When nineteen years of age he attended two courses of lectures in Louisville. After practicing medicine for a few years, he, in 1848, arrived in St. Louis and became a student in the St. Louis Medical College, from which institution he was graduated in 1849. At the instigation of his dearly beloved mother—the woman to whom every practitioner in this city owes so much—he located here and became connected with his Alma Mater as demonstrator of anatomy. One year later he was appointed professor of anatomy, which position he so ably filled until 1867, when he became professor of surgery. He was elected president of the St. Louis Medical Society in 1863. He became president of the Missouri State Medical Association, and in 1886 was elected president of the American Medical Association. At one time he was a prominent member of the Board of Health. Dr. Gregory took an active part in the surgical field. He was chief surgeon to the Sisters' and Mullanphy Hospitals for many years. A few years

ago a semi centennial banquet was tendered him by the St. Louis Medical Society in honor of his fifty years of medical service. During the past few years Dr. Gregory had not taken any very active part in medical affairs.

Dr. Gregory was a *true* man. He proved himself to be such. His one great object was to stay the hand of sorrow and disease, and to do his mite to make the earthly sojourn of his more unfortunate brother more prolonged, more joyous and more beautiful. He scattered sunshine all along the way. If the words of Emerson :

“To be simple, is to be great,”

are true, then Dr. Gregory was indeed one of the greatest of men, since one of the chief characteristics of his life was its simplicity.

Dr. Gregory was a most impressive teacher and a constant worker. He was carried away with his work and he carried his pupils away with him. He taught them just what he knew that they needed to know. His lectures were always full of interest. Every student felt that surgery was the most valuable branch of the tree. Dr. Gregory taught at the bedside and at the operating table.

A better friend to the young man has never been born. Dr. Gregory could always be approached and always had a kind word and a helping hand for the deserving student. He was always guided by the character of the individual and *not* by his good grades. In practice, the young man always found in him a staunch friend—one that could always be depended upon. Dr. Gregory always gave the young practitioner just what he needed most. He was indeed a friend in need.

That Dr. Gregory was always most considerate of his patients was evidenced by the fact that he would never perform an operation unless he felt confident that the patient's condition demanded it, or that the patient would be benefited by such a procedure. He was a conscientious man. He fully appreciated the truthfulness of Dr. Henry H. Mudd's rule. The late Dr. Henry H. Mudd said: “Treat every patient as though that was the only patient you had. Always do your very best for the patient. Give him the best you have.” The memories of such men we will always cherish.

Dr. Gregory's personality endeared him to all who came in contact with him. He stood for everything good, pure, and upright. He was charitable and he freely bestowed good gifts upon the needy and

afflicted whom he met professionally. He fought a good fight, and he did his duty in the fullest sense of the word.

And thus we see that Dr. Gregory was indeed a grand and good man in whose life, the words of the Lord, who said :

"Inasmuch as ye did it unto the least of these, ye did it even unto me,"

found their translation and full exemplification.

The name of Dr. Gregory—with that of McPheeters, of Elsworth F. Smith, Sr., of Mudd, of McDowell, of Hodgen, and of Boisliniere—will ever embellish the annals of history.

Though he has departed from us in the flesh, he remains with us in thought, and his character can not be forgotten.

Methinks I see the smile that gladdened the radiant, wrinkled face when the Savior said :

"Well done, my good and faithful servant. Come up higher."

E. A. BABLER.

Trachoma In Children.

C. Cole Bradley says that the soft follicular trachoma seen daily in New York school children is often very difficult to distinguish from follicular conjunctivitis. His rule to classify as follicular conjunctivitis those cases in which the follicles are limited to the lower lids. In these cases they are lightly scattered over the lids in rows and are superficial. When, however, these same benign follicles appear on the upper lids, even without deep infiltration of the conjunctival tissue, the case should be classed as trachoma. Cases that respond to mild astringents in a short time, or to fresh air, better food and to relief from errors of refraction are cases of follicular conjunctivitis. Where there is doubt, it is safer to separate and isolate. Later, the hypertrophy and consequent shrinking of the conjunctiva will surely appear if it is a true case. In discussing the treatment he says that the general use of sulphate of copper is not altogether harmless, as it may lead to serious cicatricial contractions. The use of 1 per cent solution of bichlorid of mercury is harmless, and is equally good in its curative results as sulphate of copper. Copper citrate is apparently harmless, and is devoid of the objectionable features of copper sulphate. General anesthesia is unnecessary in the operation of expression. Cocain hydrochlorate applied in solid form, about two grains to each eye, answers every requirement and obviates the necessity of a hurried operation, with its frequent extensive laceration of lid tissue.—*Medical Record*.

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EDITORIAL COMMENT.

Quinin in Pneumonia.

The recent controversy concerning massive doses of quinin in pneumonia emphasizes the point that the profession often rediscuss something which is apparently new, and yet was tried and rejected a generation or more ago. A full dose of quinin in the early stages of pneumonia may occasionally abort the disease, just as this drug may abort other infections of the respiratory tube, but that its persistent administration in ponderous doses lessens the general mortality is extremely doubtful. Since active leukocytes are, according to modern theories, necessary to the destruction of bacteria, the inhibition of phagocytosis produced by enormous doses of the cinchona alkaloid must be seriously considered, and its beneficial potency questioned. Agents that paralyze the vital activity of the cellular elements are of questionable utility. Possibly, some chemicals which have elective food properties to tissue cells (*e.g.*, lecithin, glycogen, nuclein), may in the end do more good than large doses of the internal antiseptics. The therapy of pneumonia is still in hopeless confusion although the actual data collected make a stupendous aggregation. If we must experiment, let us rather follow the teachings of modern dietetics and physiology than that defunct theory of internal antiseptics which even Bouchard could not raise to meet the present day known facts.

Accidental Vaccination.

Several years ago the writer vaccinated an infant a few months old with the usual good result, except that a few secondary vaccin pustules occurred on the arm of the child; but what makes the case noteworthy is that the mother acquired a vaccin pustule on the upper lip. It was a case of accidental vaccination, an incident which emphasizes the well known, but usual disregarded fact, that vaccinia is a communicable infectious disease. The lesson was plain, the vaccin lesions and the discharges from them should not be allowed in contact with other susceptible persons.

The subject of accidental vaccination was studied a few years ago by a layman—Blochman, whose own child, suffering from facial eczema, was accidentally inoculated from a brother who had been vaccinated. The infection occurred on the face, involved the eye and panophthalmitis with destruction of the eye resulted. It was a case of accidental inoculation (see report by Dock, *New York Med. Jour.*, January 6, 1906). Blochman insists that the dangers of accidental vaccination have not been sufficiently accentuated, which is, no doubt, too true.

The discharge from vaccin lesions should not be allowed to come in contact with the patient's fingers whereby it may be conveyed to others, and Dock is to be commended for bringing this important work to the attention of American physicians.

Magnesium Sulphate.

We are not sure that the dispute concerning the cathartic action of certain salts of the alkalis and alkaline earths has subsided; in fact, in the light of recent work it must all be threshed over again. The theory of Liebig, that a concentrated salt solution introduced in the intestine causes fluid to be poured out from the blood according to the laws of osmosis, while very popular, was overthrown by Aubert, who demonstrated that even a very dilute solution of salt acts similarly. Buchheim tried to prove that Glauber's salt has a specific irritating affinity for the intestinal epithelium, but was unable to make his point.

About two years ago McCallum went over this subject again experimentally. He pointed out that Schmiedeberg and others explained the purgative action on the ground that the salines prevent the absorption of water. Loeb suggested that the salts increase the peristalsis because they produce muscular twitchings and hypersensitiveness of the nervous system.

McCallum injected barium chlorid, sodium citrate, sulphate and tartrate intravenously, and found, contrary to Buchheim's results, that intestinal peristalsis and intestinal secretion was very much increased. Additional experiments convinced him that Liebig's theory is all wrong, and that saline purgatives do not act locally in the intestines, but "exert their influence after they have been absorbed into the blood."

But how about magnesium sulphate? Surely, in the light of Meltzer's experiments, showing its toxic, especially its anesthetic action when injected intravenously or intramedullary, the salt must not be absorbed when given by the mouth and, consequently, must produce its cathartic effect by local action.

We are rather impressed that the action of salts must be studied again more carefully.

Acid Intoxication After Anesthetics.

Every now and then some surgeons report a case of peculiar rapidly fatal toxemia after a prolonged operation, the cause of which is obscure. We have also heard of this trouble after parturition during which chloroform was given for a prolonged period, and the ultimate cause of the violent symptoms have been unknown. Now, we are beginning to believe that anesthetics, especially chloroform, can produce a destructive effect on the liver and kidney cells, very similar to phosphorus poisoning. In many cases a peculiar idiosyncrasy seems necessary to explain the toxic effect, but certain predisposing causes have been noted, *e g.*, hemorrhage.

The symptom complex makes its appearance from a few hours to a few days after the anesthesia and consists of vomiting, restlessness, delirium, convulsions, coma, irregular breathing, cyanosis, icterus in varying degree and fatal termination. The disease as described by

Bevan and Favill is a hepatic toxemia, resulting from acute fatty degeneration of the liver and seems to be a clinical entity. The disease is characterized by an acid intoxication; acetone, diacetic acid and beta oxybutyric acid being found in the blood and urine.

This research on clinical reports and animal experimentation should be given wide publication, its importance can scarcely be appreciated at once. A new limitation to general anesthesia must be laid down. Two hours of constant inhalation of chloroform should be almost the limit. Three hours under chloroform must be termed bad surgery.

Several clinical varieties must receive renewed interest in the light of this investigation. First is acute yellow atrophy of the liver, many cases of which occur after chloroform anesthesia. Next, the rapid death after abdominal operations, which have hitherto been attributed to intestinal toxemia; and lastly, certain fatal cases of nephritis after operation need a more careful study.

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The Serum Disease.

The *Jour. Am. Med. Ass'n*, April 7, has an editorial on this subject in which it summarizes a recently issued monograph on the subject. We expect, in future text-books on medicine, to see this name among other nosological entities. Certainly, the eruption, edema, joint pains, enlargements of the lymph nodes, etc., form an interesting study, which is still inexplicable on all known grounds. The theory that precipitins produce coagula which cause a mechanical obstruction in the capillaries of the skin, does not explain all the clinical facts. The incubation is usually from eight to twelve days, but it may be much longer. Occasionally, even in a child who has never received a serum injection, the eruption may appear in a few hours. These puzzling features need more light from clinical experience; hence, it is in

order to report cases of serum disease. When, for the purpose of immunization or in the cases of mistaken diagnosis, a large dose of antiphtheritic serum is injected, the symptoms following should be carefully studied. The transitory joint pains are really independent of the rash, according to our observation, hence, must depend on a different action from that on the skin. Fever occurs in many cases, but in others febrile movement even with a very extensive eruption is absent. Let us hear from clinicians concerning the phenomena following antitoxin injections.

The Origin of Man.

The theory that man and the anthropoid ape have a common ancestor has recently received an additional support by some new discoveries in the domain of pathology. Metchnikoff discovered that the chimpanzee is susceptible to syphilis and this animal is being used to produce curative sera against this disease. Another curious fact is that the blood of the anthropoid ape is similar to human blood in the phenomenon of hemolysis, which accentuates its biological identity. The menstrual function in the anthropoid ape is said to resemble that of the woman; it is no wonder, in the light of these facts, that the evolutionist are again becoming strenuously aggressive. The phenomena, according to Saleby, prove conclusively that man and the chimpanzee have a common origin. We expect a new era of debate on the origin of man from the new book by the author mentioned. Meanwhile, the evolutionist himself might collect some facts, a task which they have neglected since the days of Dawin.

Lying as a Disease.

Gradually clinicians are widening the field of nosology, and the pernicious habit of lying purposely or on trivial grounds is the new syndrome to receive a place in our classification of disease, according to Gordon (*American Medicine*). There can be no doubt that lying is often a symptom of degeneracy but we would scarcely give it a

place of its own. Like swearing, it may be due entirely to bad training or evil example in childhood. Some characters have grown famous by their deceitful qualities and the individual recognizing the reason of his prominence is likely to keep it up. "After a tongue has once got the knack of lying," says Montaigne, "it is not to be imagined how impossible almost it is to reclaim it."

While we must recognize inordinate lying as abnormal, other corroborative evidence must be found to make it a disease.

The Tuberculosis Question.

It will be recalled that Behring a few years ago began a heated controversy by stating that tuberculosis was usually acquired through the intestinal tract and not through the respiratory tube. At first, very vigorous objections were made to this theory, inasmuch as it upset preconceived theories as to the modes of infection by inhalation. Curiously enough we are getting accustomed to this view and while cows' milk as the source of tuberculosis is not given an important part, the intestinal mucous membrane is blamed mostly for not preventing the ingress of the tubercle bacillus. According to Schlossman, even Behring today admits that the tuberculous person is the principal source of infection to the child. Schlossman (*Arch. f. Kinderheilk.*) furthermore relinquishes his position as an opponent to Behring's position, and now believes that tuberculosis in the young has an enterogenic and not an aerogenic origin. The tubercle bacilli must be swallowed to produce tuberculosis of the lungs; the bacilli do not reach the lungs by inhalation, and the inhalation theory is beginning to lose caste.

Administration of Chloroform.

Chloroform should not be administered too close to a gas jet or gas stove, as its vapors are thereby decomposed, forming products which when inhaled by the patient, surgeon and assistants may give rise to disagreeable and even serious effects, such as nausea, vomiting and pulmonary and renal irritation.—*Internat. Jour. of Surg.*

LEADING ARTICLES.

Intracorpuseular Conjugation in Malarial Plasmodia and Its Significance.

Since the classic work of the Italian investigators on the sexual cycle of the malarial parasite in the stomach wall of the mosquito, it has been considered that that was the only conjugation that occurred. In fact the two cycles were sharply differentiated—the asexual in the blood corpuscles of the animal host, the sexual in the body of the mosquito. This conclusion followed from the marked differences in the intracellular and extracellular forms of the parasite. The former grew to maturity, formed its rosette or pre-segmenting body and in due time ruptured; thus setting free into the plasma young, active forms that again entered the corpuscles and reached maturity. The latter, at any stage of the intracellular growth, might be extended and grow to large female or smaller male forms; these latter at a certain stage of their growth becoming flagellated, the flagellum entering the female cell forming the sexual cycle. This fertilization first observed by MacCullum has since been over and over confirmed.

Mannaberg mentioned the fact that there might be intracorpuseular conjugation and Ewing, first in America, insisted that this phenomenon occurred but he thought it rather rare and was of no essential importance in the human life cycle of the plasmodium.

Charles F. Craig (*American Medicine*, December 9 and 16, 1905) in an interesting article discussing this question at length gives his conclusions based on the study during the past few years of hundreds of fresh and stained specimens of blood from patients with active, latent, and marked malarial infections. Craig says: "While I do not believe that the facts warrant the assertion that sporulation can not occur without previous conjugation, it is, without doubt, true that conjugation is essential to the maintenance of malarial infection in man, and that in those instances in which it does not occur the plasmodia undergo asexual sporulation for a limited time and then perish, thus leading to spontaneous recovery which, as is well known, is frequently observed in malarial infections. These studies also prove that in latent malarial infection conjugation is seldom observed, and

therefore, we are justified in assuming that the severe, acute malarial symptoms observed clinically are only present in those cases in which conjugation is. In other words, autoinfection in malaria can only be maintained when conjugation is present and its disappearance is the explanation, partially at least, of spontaneous recovery or the cessation of the clinical symptoms."

In the estivo autumnal form of the parasite conjugation is seen at its best. The process takes place between the hyaline ring forms and consists in a fusion of two young plasmodia. In fresh specimens they are seen to coalesce. In stained specimens the stages are easily followed and consist in the fusion of the protoplasm of two hyaline ring-forms which can not be differentiated one from the other, and there the fusion of the nucleus after which the typical body is seen with the chromatin clump in the center of a lighter achromatic ring and a blue protoplasmic ring. In the tertian and quartan forms similar fusion takes place between the hyaline forms before there is any formation of pigment granules.

Craig finds that in initial acute malaria intracorporal conjugation is invariably seen. He believes that there is a definite relationship between the number of conjugating parasites and the clinical symptoms—the sharper the attack the more conjugating forms are to be seen. After the administration of quinin conjugation is not observed although sporulation continues.

In recurrent malarial attacks conjugation was found in nearly all cases studied. In a few after careful and prolonged study it was not found, so the author considers it fair to conclude that conjugation is not absolutely essential in order to produce clinical symptoms. [It would seem, however, if we take the author at his word that he should find conjugation in *all* cases of recurrent infection, however, we do not believe that a prolonged search over many specimens gives us the right to say with assurance that conjugation, for example, does not occur somewhere and at some time. Therefore, we believe that the author could consistently conclude that all cases conjugated if he is seeking to prove such an hypothesis.—Ed]

He found in latent infections no conjugating forms. In some cases where they were found it is interesting to note that within twenty-four hours clinical symptoms developed.

He speaks of the conjugation as intended to preserve the repro-

ductive power of the plasmodia by "rejuvenescence." His conclusions are interesting:

"1. Intracorpuseular conjugation is always present in acute initial attacks of tertian, quartan, and estivo autumnal malaria, almost invariably present in recurrent attacks, and almost never present in latent infections.

"2. It has, in the vast majority of cases, a direct relationship to the severity of the clinical symptoms.

"3. It is not absolutely essential to sporulation or to the disappearance of the clinical symptoms.

"4. It is essential to the maintenance of autoinfection, and its disappearance results eventually in spontaneous recovery."

These observations of Craig support the findings of Ewing, but Craig has gone further in his work and has endeavored to explain certain hitherto inexplicable but well-known phenomena. Should his work be confirmed it will serve to clear up some of the haze that has hung over the so called "latent" and "marked" infections and it may prove of some value in prognosis.

L. M. WARFIELD.

Researches in Heat Regulation.

It has been found that special substances are formed in the blood of animals subjected to abnormal temperatures, and that it is also markedly toxic if injected into other animals. A. Montuori (*Arch. Ital. de Biologie*, March 21, 1905) made a special investigation along this line, with the object of isolating these toxic substances, and of determining whether they produce the same effects in the animal in which they are generated. He transfused certain dogs with the blood of other dogs kept in baths of hot water 40 to 48°C., or of cold water 0 to 6°C. The results were as follows:

The transfusion of the ordinary or of the defibrinated blood from the heated or refrigerated dog causes in the transfused animal a diminution or an augmentation of the quantity of heat produced. These thermic effects are proportional to the amount of blood transfused, and also to the degree of heating or refrigeration of the animal from which the blood is removed. The effects are always transitory and cease at the end of not more than twenty-four hours. The transfusion of large quantities of blood from heated dogs is fatal, which is not the case

with blood from refrigerated animals. The administration of the blood by way of the stomach or intestine has no thermic effect, while the transfusion of blood from an animal kept at the ordinary temperature has also no thermic influence. These results reveal a form of heat regulation that has been hitherto unknown, indicating the production of thermoinhibitory substances in heated animals, and of thermoexcitatory substances in refrigerated animals. This mechanism applies only in the case of the heating or cooling of the cutaneous surface of the body, and does not apply to the same condition in the lining of the alimentary canal. It is interesting to note that animals heated by general faradization furnish a blood that causes hyperthermogenesis and elevation of temperature in other animals. If an animal be injected with antipyretics (quinin, antipyrin), its blood will not cause any thermic changes in another animal, which proves that the antipyretics do not act by the production of thermoinhibitory substances. The author next sought to discover the effects of these transfusions in the other bodily functions. They do not cause any change in the respiratory and cardiac rhythm, and produces no vasomotor effects. This shows that the thermic polypnea and tachycardia, and the vasoconstriction produced by cold are not the result of the elaboration of specific substances in the blood. Transfusions from a refrigerated animal cause, besides an increase of heat production, also an exaggeration of the respiratory exchanges. On the contrary, the transfusions from the heated animals had no effect on the gaseous exchanges. The transfusions from a heated animal cause an increased production of sweat in the animal transfused. This action is evidently a central one. Likewise, there is also an increased secretion of saliva which is similarly a central effect, since section of the chorda tympani annuls it. There is also increased secretion of pancreatic juice. Hence, the elevation of an animal's temperature causes the production of a substance or of substances which may be compared to pilocarpin. The transfusion of blood from a heated animal or even heating an animal directly causes an increase in the muscle glycogen. The hepatic glycogen does not suffer any marked variations. One naturally concludes that there is a transformation of the glucose of the blood into the glycogen of the muscle. The results of an investigation into the nature of the thermoactive substances were very incomplete. They are not volatile, for blood subjected to the mercury-pump preserves its thermoactivity.

This evidently resides in the morphologic elements, for the serum is inactive, while defibrinated blood is active. The thermoactive substances are destroyed by a temperature of $55^{\circ}\text{C}.$, but they are apparently not of the nature of enzymes, for the thermic effects are quite proportional to the amount of blood transfused. These substances can not be extracted with glycerin or ether. The author next studied the site of formation of the thermoactive substances and the mechanism of their activity. Heating or cooling normal blood outside of the organism does not conflict with thermoactivity. These are formed neither in the spleen, pancreas, nor liver, for removal of the two former or ligature of the bloodvessels of the latter does not interfere with the formation of the thermoactive substances. Curarization also does not inhibit their form. If the spinal cord of an animal be destroyed, the heating or cooling of the animal always gives rise to a thermoinhibitory substance. The conclusion is readily drawn, that for the production of hyperthermoactive substances the integrity of the nervous system is necessary. The facts discovered by the author have a great deal of importance and permit the following conclusions to be drawn: In the struggle against high temperatures, the thermoactive substances play a predominating rôle. The method by which the thermoinhibitory substances operate is explained as follows:

Accompanying the lowering of the bodily temperature, it has been seen that there is an increase in the synthetic process of the organism, such as the increased formation of glycogen. The freezing point of the blood also rises, indicating a greater molecular concentration; that is, a diminution in the number of ions in the blood. These synthetic processes, which are necessarily accompanied by a diminution in the number of molecules of the blood, since the simple ones are built up into more complex ones, are therefore also accompanied by a transformation of some of the heat of the body into latent potential energy. This change of the manifest heat into potential energy is called the "endothermic reaction." This represents an admirable economic disposition in the organism. At the same time that the bodily temperature is lowered, there is a rebuilding of the tissue whose oxidation was the cause of the excessive heat. The choice of people in torrid climes of a diet of carbohydrates instead of one of fats supports this hypothesis, since the carbohydrates, by the simplicity of their constitution and the mobility of their molecules, furnish a more ready material for the synthetic processes of the organism, and therefore, furnish a ready means

for the cooling off the body by the endothermic reaction. The thermoinhibitory substances, by stimulating the production of sweat, furnish another means of lowering the bodily temperature by the evaporation. It has been found that muscles which have been made to contract vigorously furnish substances which, if injected into other animals, increase the production of heat, and that the genesis of these substances is dependent upon the integrity of the central nervous system. Now, it is known that the application of cold to the exterior of the body causes an increase of muscular tone. The conclusion is drawn that the effect of external cold causes reflexly a contraction of the muscles, and it is by means of these contractions that substances are formed which have the power of accelerating the oxidative processes with a resulting thermogenesis.—*Med. News.*

PROSTATIC HYPERTROPHY.

Its Symptomatology and Diagnosis.

SYMPTOMATOLOGY.

Experience daily corroborates the contention that the discrepancy between the true amount of prostatic hypertrophy and the severity of the clinical manifestations is often very great. A patient possessing a considerably enlarged prostate may not complain of any very annoying or severe symptoms; in some instances a slightly enlarged organ will cause symptoms out of all proportion to the amount of hypertrophy. It seems quite probable, however, that there is some relation between the part of the gland involved, the extent of the pathological changes in the neck of the bladder, the patency and resiliency of the prostatic urethra and the severity of the symptoms. Personally, I can not agree with Keyes, who compares the relation between the bladder and urethra with that between a tank and its outflow pipe, and who would lead us to believe that mere elevation of the urethral orifice plays such an important factor. To me it seems that the difficulty lies in the pathological changes which have taken place in the prostatic tissue, in the resiliency and patency of the prostatic urethra, and at the same time in the neck of the bladder. Sometime since, Chetwood called attention to the very important finding that prostatism may be due to contracture of the neck of the bladder.

German writers prefer to divide the symptoms of prostatic enlargement into three stages: In the first stage urination is difficult while the bladder is capable of emptying itself completely; in the second stage there is incomplete or complete retention; and in the third stage there is incontinence of urine with distention of the bladder. Keyes enumerates the chief symptoms under three heads:

1. Congestive symptoms, viz., priapism, nocturnal frequency of urination and prostatic neuralgia.

2. Inflammatory symptoms, viz., prostatitis, cystitis and pyelonephritis—to mention only the chief ones.

3. Obstructive symptoms, viz., retention of urine. (He believes that the ultimate cause of the symptoms of prostatic hypertrophy is congestion).

Perhaps the most constant early symptom of enlargement of the prostate is the increased frequency of urination. In some instances an inability to satisfactorily perform the act, a dribbling of urine after the act has apparently been completed, increased tenesmus, an inability to project the urine or, perhaps, an attack of acute retention, will be the first symptom to command the serious consideration of the individual. Very frequently the patient regards the gradually-appearing discomforts as natural accompaniments of his advancing years. Concerning the early clinical picture, Dr. H. G. Mudd has very fittingly said:

"In the majority of cases but little attention is given to the preliminary manifestations; the increased frequency of urination, the retention of a few drops which dribble out after the act is apparently finished. Only when bleeding, pain or obstruction seriously inconveniencing the patient, show themselves, is the matter considered of importance enough to consult the medical adviser."

The clinical picture of enlargement of the prostate is too well known to require but passing comment. The patient, usually an individual who has passed the meridian of life, at first passes his urine at more frequent intervals. He finds it necessary to urinate just as soon as he arises in the morning; gradually he is required to get up at night; he then voids his urine immediately before retiring in the evening, since the call is thereby delayed. As the months come and go he discovers that it is sometimes impossible to avoid instantly passing urine the moment the desire is felt; he can not project his urine as formerly;

the flow is liable to a sudden stoppage and, though the stream is as large as formerly, still the act requires a longer time and straining is of no avail. About this time the patient notices that there is a dribbling from the urethra after the act of micturition has apparently been completed—a very annoying and distressing symptom. The last phase is the occurrence of an attack of retention. Urinary retention is undoubtedly a most distressing condition.

DIAGNOSIS.

The diagnosis must be based upon the previous history, the findings obtained by rectal palpation, the information secured by the catheter and by examination of the urine. Some investigators believe that the cystoscope will be found useful in reaching a diagnosis of prostatic hypertrophy, but Syms says:

"The diagnosis should be made in the simplest manner possible. In a patient, 50 years of age or more, pronounced change in the act of urination should lead one to suspect prostatic obstruction. A carefully taken history of the case will put one entirely in possession of the subjective symptoms and no examination should be made beyond palpation of the prostate through the rectum and the very careful introduction of a flexible catheter into the bladder, after the patient has urinated, for the purpose of determining the amount of residual urine and the quality of the same. I can not speak too strongly against the employment of the cystoscope in these cases. I regard a cystoscopic examination of a prostatic patient who is suffering from a more or less severe cystitis as a thoroughly unwarranted procedure, and as far more dangerous than a properly performed removal of the prostate through the perineum."

In some instances a chronic prostatitis, new growths or calculi of the prostate or bladder, or strictures of the urethra, in so far as they obstruct the passage of urine, may be mistaken for prostatic hypertrophy. In chronic prostatitis the three-glass test will show typical comma filaments, pus and, perhaps, gonococci (even in the middle glass). A sarcoma or a carcinoma involving an otherwise normal prostate may be difficult to differentiate; when the gland has become irregular, nodular and of hard consistence, rectal palpation will render the diagnosis fairly clear. A calculus of the prostate usually forms in the gland, it feels hard while the other portions of the gland are soft, perhaps, abnormally so (Nitze). Tumors of the bladder should be carefully ex-

aminated and tumor fragments should be searched for in the sediment. An hourglass-shaped vesical calculus may give trouble in diagnosis but the history of the case and a careful examination will clear up the obscurity.

In the next issue the treatment will be discussed.

E. A. BABLER.

Etiology and Treatment of Concomitant Convergent Strabismus.

It is now generally conceded that the deviation of the eye in concomitant convergent strabismus is only one of a number existing abnormal conditions, there being lack of development of the fusion faculty, errors of refraction, suppression of the image of the deviating eye, and impairment of vision of this eye. Usually the last three of these conditions result from the first two. Since the time of Donders it has been recognized that errors of refraction, particularly hypermetropia and hypermetropic astigmatism, were related to concomitant convergent squint; and he, with other authorities, taught that this form of strabismus was caused by the excessive convergence of the eyes associated with the accommodation constantly necessary for clear vision in hypermetropes. This is still believed, by most authorities, to be a very important factor, but not an essential one, as occasionally a child with myopia or myopic astigmatism develops convergent strabismus.

The fundamental cause of squint is the absence or lack of development of the fusion faculty. The child is not born with this faculty but develops it during the early years of its life. From a careful study of the subject Worth found that it began to develop at about the sixth month of the child's age, and that after the sixth year very little, if any, further development took place. Between these two ages is when the great majority of patients show the first symptoms of squinting. Worth found that in upward of 2000 cases the trouble began before the end of the fourth year in more than 75 per cent, while only $7\frac{1}{2}$ per cent the trouble come on later than the end of the sixth year. The findings of other observers are very similar.

Since the essential factor in the cause of concomitant squint is lack of development of the fusion faculty and since this development usually takes place before the end of the sixth year, it is obvi-

ous that treatment should be commenced early if the best results are to be obtained.

The treatment which should be instituted, is:

1. Correction of the errors of refraction.
2. Orthoptic, or educational training of the fusion faculty.
3. Improvement of the vision of the defective eye by compelling its use.
4. Operation, when necessary.

Errors of refraction should be carefully corrected as soon as it is discovered that a child is beginning to squint. In thus removing the tendency to excessive convergence we remove a condition which interferes greatly with the development of the fusion faculty. No child with convergent strabismus should be considered too young to wear glasses if he has any marked error of refraction. If glasses are worn and the eyes kept straight until the fusion faculty is fully developed they can often be laid aside or used only for near work as the child gets older.

The orthoptic treatment with the old stereoscopes was very unsatisfactory, but by the use of such devices as Worth's amblyoscope, Ramsey's adjustable stereoscope and Jackson's fusion tubes we now get much better results. While this treatment is beneficial before the sixth or seventh year, after that little can be accomplished by it as the fusion faculty can not usually be developed much after this age.

The improvement of the vision of the affected eye is accomplished by compelling its use, either by covering the good eye for several hours each day or by instilling a drop of one-half of one per cent solution of atropin into the good eye each morning which prevents its use for seeming-near objects, the child soon learning to use the poor eye for this purpose. By these means the vision can often be greatly improved.

By thus improving the vision of the poor eye, training the fusion faculty and keeping the errors of refraction corrected by the proper glasses a very large per cent of these cases can be permanently cured if the treatment is begun early. Wendell Reber, from a clinical and statistical study of 166 cases, concludes that if treated before seven years of age 70 per cent of the cases can be cured without operation and he believes this can be increased to 80 per cent, in the next ten years.

The operation of tenotomy or advancement should, of course, be done only after all other means have been tried and found wanting.

Authorities differ as to when an operation should be done, some believing that it is best to wait until puberty while others claim it should be done as soon as it is certain that other means will not suffice. Priestly Smith advises operation when no further improvement can be had by optical and orthoptic treatment, even in children as young as two years of age.

In view of what is known on this subject it is little short of criminal for the physician to tell the anxious parent who brings a squinting child to him, for advice, "Don't do anything now, he will probably, outgrow it; advice that, unfortunately, is too often given.

W. A. SHOEMAKER.

Experimental Arteriosclerosis.

Conditions favoring the production of pathological lesions in the human body, which, of themselves, then reveal disease as manifested by clinical symptoms, have occupied the minds of men from the earliest times. Without the foundation of pathology to build upon, clinical medicine becomes a fertile field for theory and speculation which, more than often reaches absurd heights. It is only by the experimental production of diseased processes in animals, alike as analogous to those in man, that we have already succeeded in placing clinical medicine on a bed rock foundation. A disease, like arteriosclerosis, has long baffled the experimental pathologists.

The study of diseased arteries in man, while complete as far as the histological study of a particular stage of the process went, still lacked the essentials of graded lesions from the time of the very first damage to the arterial walls. The completed process we have long known. The beginning process we have long sought.

It thus becomes a pleasant task to chronicle in brief some recent experiments on the rabbit conducted by R. M. Pearce and E. MacD. Stanton, of Albany, N. Y. (*Jour. Exper. Med.* VIII, No. 1, 1906). By injecting solutions of adrenalin, 1/1000, into the ear veins of rabbits in doses of 3 minims for a number of days they have succeeded in producing in the aortas of the animals atheromatous and calcareous patches that on macroscopical examination can not be differentiated from similar plaques on the aortas of human beings the subjects of arteriosclerosis. This field is brand new. It was as recent as 1903 that Josué¹ described experimental lesions in the aorta of rabbits

which he produced by frequent intravenous injections of adrenalin. His work has received ample confirmation. Pearce and Stanton gave rabbits m. 3 in the ear vein every other day, in some experiments the dose was gradually increased. Very interesting was the peculiarly fatal effect of even small doses of adrenalin. "In some instances death resulted within a few minutes after the injection, in others, after a few hours. The immediate effect of the intravenous administration of adrenalin is collapse with difficult and rapid respiration. The animal lies on its abdomen, with legs outstretched, and head resting on the table or raised in spasmodic respiratory effort. Death, preceded by severe convulsive movements, may occur immediately."

The earliest change manifested to the naked eye is faint longitudinal or irregular grayish streak of the intima without thickening. The late lesions showed calcified plates in a rigid aorta. Histologically the earliest lesions are seen in the middle coat of the artery as foci of degeneration seemingly affecting the muscle fibers. The elastic fibers are found ruptured and there are several layers of cells formed by the proliferation of the endothelium of the intima. The process is evidently one of compensatory thickening and an effort on the part of Nature to strengthen a weak spot.

Pearce and Stanton found several dilatations along aortas that were evidently the beginnings of aneurisms. In some specimens the media was completely filled with calcareous deposit.

Although pathologists are divided in their opinions as to the pathogenesis of arteriosclerosis it would seem that these experiments lend support to the view long ago expressed by Thoma that the first lesion is a rupture of the media and the intimal changes are of a compensatory nature.

Pearce and Stanton do not offer any explanation for the mode of action of adrenalin. They suggest that the heightened blood pressure at the time of spasm of the vaso vasorum produces a condition analogous to anemic necrosis. The fracture of the elastic fibers is largely due to mechanical factors. Drummond² divides all the histologic lesions into those due to toxic action and those due to increased blood pressures. Lissauer³ believes that the toxic influence is the most important factor, but offers no explanation of its mode of action.

This work throws a flood of light on conditions hitherto specula

tive and places arteriosclerosis on a sure pathological basis. Much work has yet to be done, but the lines are laid out and promises of interesting results are even now being hinted at by those working in this new field of experimental pathology.

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The Treatment of Infantile Tetany.

Since the carpopedal spasm, laryngo spasm and eclamptic attacks are caused by nutritive disturbance, the food requires prompt attention. The proprietary canned foods, condensed milk, peptonized milk or sterilized milk should be discarded as soon as possible and fresh, raw milk substituted. When cows' milk can not be digested in ordinary dilutions, some gruel (barley, rice, roasted flour) should be used as the diluent. The following mixture for an infant of 8 months will usually be safe:

R.	Fresh 7 per cent top milk.....	℥ 18
	Roasted flour gruel.....	℥ 18
	Sugar.....	tablespoonfuls, 2

M. Sig.—Feed 6 ounces every three hours.

Sodium citrate may be used to prevent the curdling of the casein. For example:

R.	Fresh milk.....	℥ 16
	Water.....	℥ 16
	Sodium citrate.....	gr. 16

That is, 1 grain of sodium citrate (preferably freshly made) is needed for every ounce of milk.

If milk can not be made to agree (which should be very rare) a mixture of whey can be used. The white of egg is also very helpful in these mixtures. Occasionally, a mixture of cereal decoction and mutton or veal broth must be temporarily employed.

In addition, orange juice and beef juice are helpful. The canned extracts of beef are probably less serviceable.

In the way of medication, some phosphorus compound is a valu-

able adjuvant. Dr. Saunders has for many years advocated the compound syrup of phosphates. Dose, ʒss, t.i.d. The yolk of egg, because it contains much lecethin, can be added to the milk.

The bromids and chloral are of little value in controlling these spasms, but may be prescribed in order to induce sleep. It is the nutrition that needs attention, and the spasms will permanently disappear as soon as the fault is corrected.

Mice and Pneumonia.

No problem in practical medicine offers a greater interest or in its solution promises more for prophylaxis than the exact determination of the mode whereby the pneumococcus enters the air vesicles of the lungs and initiates its specific reaction, known clinically as croupous pneumonia. Various theories have been elaborated, none of which, however, meet all the known conditions. The pneumococcus having a diminished virulence is known to reside on the mucous membrane of the mouth and pharynx of many healthy individuals, but this does not in the least argue, as some writers assert, that an individual may acquire the disease autogenetically. For, in healthy persons the mucous membrane of the bronchi and air vesicles are sterile. The bacteria that are carried into the bronchi find the soil unsuitable for growth and are killed.

Experiments have shown that when the saliva of two or more persons are mixed the infection is manifested with increased virulence, and a theory has been elaborated from this fact.

Now, the problem ought not to be difficult. How can virulent pneumococci reach some air vesicle in sufficient numbers to overcome local resistance?

Palier (*Medical News, Medical Record*) has recently put forward an interesting hypothesis, namely, that pneumococci must first pass through mice to increase the virulence of the former, before the lung can be attacked. In other words the mouse is the intermediary host, becoming infected with human sputum, and in turn forming the source of virulent germs that cause pneumonia.

It is true that the passage of pneumococci through mice renders them more virulent to mice, but we must not conclude that this virulence to man is increased. Hence, Palier's theory has a very shaky

foundation and must at the outset be regarded as purely gratuitous and speculative. Virulence toward mice and rats by no means points to virulence in man.

In the second place, no bacteria are known which require an intermediary host in order to infect man, and the analogy drawn from the protozoa can not be applied to the pneumococcus.

Lastly, the transference of the virulent infection from the mouse to lungs of man offers insuperable difficulties. If there was anything in this theory one would expect cooks and chambermaids as the most frequent victims of the disease. If the bacteria were disseminated by decomposing mice who have died of a pneumococcus infection, the pneumococcus would need have a resistance to desiccation not shown by actual experiment.

Palier's suggestion interesting but lacks all experimental and clinical support.

To us, the incidence of pneumonia offers no such obstacles. With the housing of people and the more intimate association in the winter months, the prevalence of coughs whereby innumerable bacteria from the throat are cast into the stagnant air of the room, the mucous membrane is called to a much greater task of destroying virulent bacteria; hence, it follows that the mucous membrane sometimes fails and the disease results.

We wish also again to call attention (ST. LOUIS COURIER OF MEDICINE, June 1900; *Interstate Medical Journal*, 1904) that the pneumococcus occurs in many cases of bronchitis and bronchopneumonia in large numbers, and it is more than possible that by this rapid passage from one to the other their virulence is greatly enhanced. What is only a bronchitis in one patient may be a croupous pneumonia in the second.

It is, therefore, not unreasonable to suggest that the origin of the prevalence of pneumonia in March and April is found in the fact that more virulent pneumococci are in the air which we breathe; it is the same with measles and other infectious diseases which depend on direct transmission, the number of cases are gradually increased during the winter and rapidly decline when our open-air life begins in May.

CURRENT EDITORIAL TOPICS.

Heart Block.

"By the term heart block is meant a condition in which the auricles and the ventricles beat rhythmically and independently of each other, because the impulses which cause the auricles to contract do not reach the ventricles. It is found in cases, known clinically as Stokes-Adams disease, which are characterized by vertigo, sometimes associated with loss of consciousness, pain or soreness in the chest, dyspnea, and a remarkable difference between the pulse rate and the rate of the heart, for example, pulse 32, heart 124. Venous engorgement and venous pulse are also seen. In cases of Stokes-Adams disease there is often a period of partial heart block in which the auricles do not beat independently, but in which there is a distinct ratio between the two, one ventricular contraction to four auricular contractions, one ventricular contraction to three auricular contractions, etc."

Thus, the New York *Medical Journal*, introduces a critical examination of the recent work of Erlanger (*Jour. Exper. Med.*) who, in an exhaustive study of a case of Stokes-Adams disease, was afforded an opportunity for watching the reactions of the auricles and ventricles to external stimuli. Two rhythms were observed in the study of arterial and venous pulsations; one of which was referred to auricular, the other to ventricular contraction. After mentioning some of the results, the writer continues:

"When heart block is complete, atropin has no effect upon the ventricular rate, but it has the usual accelerating effect upon the auricular rate. In partial block atropin has no direct influence on the ventricles. In other words, influences normally transmitted by the pneumogastric nerves do not affect the ventricles, but do affect the auricles as usual. Influences which normally reach the heart through the accelerator nerves still influence the rate of the ventricles as well as that of the auricles.

"The increase in the auricular rate is the important factor in the production of the degree of partial heart block and in the production of the syncopal attacks in cases of Stokes Adams disease. The marked slowing of the ventricular rate is the main feature of the syncopal attacks."

Calcareous Degeneration.

Considerable editorial discussion has been incited by the work of Klotz (*Jour. Exper. Med.*) on calcareous degeneration. The *Medical Record* notes that many theories have been advanced to account for this degenerative process, but the few facts known have not placed any theory on a substantial basis. The writer continues:

"The older writings contain numerous references to the condition, and an excess of lime and salt in the blood was commonly accepted as an explanation of its origin, while dead or dying tissues were regarded as a nucleus around which the carbonate or the phosphate of lime could crystallize. This view was later superseded by a theory which was based on experimental studies dealing particularly with calcareous degeneration of the kidneys. Litten, who first broached the idea, had many adherents and as many opponents."

The experimental work of Klotz is then mentioned, who undertook to produce calcification of the kidney experimentally. The most interesting observation was that deposits of soapy material preceded the deposit of lime salts. A calcium soap-albuminate is formed which is later changed to calcium phosphate. Attention is called to some of the conclusions:

"Bone formation and pathological calcareous infiltration were found to be wholly distinct processes; in the former there is no evidence of associated fatty change, in the latter there is an antecedent fatty change in the affected areas, and the cells involved present constant evidences of degeneration. The view that would seem, according to Klotz, to account best for the changes observed in the latter case is that, with lowered vitality, the cells are unable to utilize the products brought to them by the blood, so that the normal decomposition associated with their metabolism fails to take place. They interact, therefore, among themselves, with the result that insoluble compounds replace those of a soluble character. Klotz has also demonstrated the presence of soaps in areas which are undergoing calcareous infiltration."

As regards the existence of soaps in the normal organism, the *N. Y. Medical Journal* states:

"Normally, in the human body, fat circulates in the blood as diffusible soaps. The various cells take up these soaps, which may be stored in the cytoplasm of the cells, after having been reconverted into

neutral fats, or become assimilated into the cytoplasm, when they are unrecognizable by the ordinary microchemical tests. If this proposition of the normal physiological chemistry of fats is accepted, the appearance of fat and soaps in degenerated cells may be accounted for either by absorption or infiltration of soaps from the surrounding media, the degenerating cell retaining the power of splitting off fat, but being unable to make use of it in metabolism; or by the liberation of the fat from its combination with the cytoplasm. The appearances seen in the cells of the atheromatous areas in arteries indicate that the former process does occur."

The demonstration of fatty acids and soaps was accomplished by staining with Sudan III. When capsules of fats and fatty acids are placed within the tissues, soaps are gradually formed by the diffusion of calcium into the capsule.

Altogether this interesting work contrasts strikingly with the older view (*Ibid.*):

"It was formerly taught that calcareous degeneration was a purely passive process, the cells taking no part in it. The tissues were thought to be gradually petrified by the deposit of earthy salts from the blood. So recently as in 1904 calcification was said to be a process of infiltration. The deposition of calcium salts could not be satisfactorily explained by the theory that those salts were carried to the tissues by the blood and the lymph, because the tissues which are especially prone to calcification are poorly supplied with both these fluids. And the theory of the relative amounts of carbonic acid held in solution by the arterial and the venous blood did not satisfactorily explain the process."

Neurone Theory.

According to Barker (*New York Medical Journal*) two schools are arrayed against each other, the neuronists and the antineuronists, and in spite of ingenious theories and plausible arguments of the latter, the position of those who hold to the neurone theory is the stronger one. To quote:

"It is interesting to note the observation upon which the opponents of the neurone theory have based their arguments. It was the discovery by Apathy, in 1899, of fine lines in the nerve structures of the leech that laid the foundation of this opposing doctrine. These fine filaments he termed neurofibrils, and he regards them, and not the

axis cylinder, as the sole conducting elements. Other observers with newer methods of staining have confirmed the existence of these fine strands. The method of Ramon y Cajal and the still more recent method of Donaggio have revealed these neurofibrils as a fine network in the nerve cell, from which they pass into the axis cylinder process in numerous fine fibrils. That these fibrils represent the essential paths for the conduction of nerve impulses has not yet been proved."

The "neuralgray" of Nissle was drawn from the imagination and the delicate reticulum has never been seen. The writer continues:

"The mode of transmission of the nerve impulse from one neurone to another has always been a perplexing problem and still baffles explanation. Held supposed that the dendrites came into relation with neighboring nerve cells in two ways—first, by an anastomosis of their terminal filaments, and, second, by direct continuity of the fibrillar network of the cells. The method of Golgi revealed a fine plexus of fibres around the nerve cells, and in the meshes of this network are little knotlike bodies, the "neurosomes." These Held regarded as the "end feet" of the neighboring dendrites. Still more recently these have been termed the "terminal buttons of Auerbach." According to Professor Barker there is probably no continuity of structure between the terminal buttons of the dendrites and the contiguous cells, but it is not impossible that a layer of protoplasm may lie between them."

The doctrine of "autoregeneration" has been shattered by recent experiments, so also has been the theory of the pluricellular origin of the neurone, and his conclusion is that "the tendency of modern research is toward the view that the neurone is an anatomical and physiological unit."

A New Theory of Pharmacological Action.

The New York *Medical Journal* discusses the interesting analogy of Ehrlich's side chain theory and some recent explanations of drug action. Langley's discovery in regard to the action of nicotin that neither muscle or nerve was affected, but some intermediary tissue which he calls synaptic substance, is very similar in finding to that of Elliott on adrenalin. The latter found a "Myoneural junction" as the part directly concerned in the action. To quote:

"It was found that in the normal state both nicotin and curare abolished the effect of nerve stimulation, but did not prevent a con-

traction from being obtained by direct stimulation of the muscle. Moreover, on further injection of an adequate quantity of nicotin, stimulation of the nerve would produce the muscular contraction. From these results it was concluded that neither the poison nor the nerve impulse acted directly on the muscle substance, but on some accessory substance. The latter is normally the recipient of the stimuli, which it transfers to the contractile material, and is spoken of as the receptor substance of the muscle. Only on this hypothesis can one account for the fact that, while a small dose of nicotin prevents the nerve impulse from reaching the muscle a large dose has no effect.

“Each kind of muscle has its own specific receptor substance, and it is inferred that the same is true of all other kinds of tissue. Certain familiar actions of drugs on special tissues can easily be explained on the basis of this ingenious theory. Thus, it is well-known that adrenalin has an elective action on unstriated muscle, but particularly that of the bloodvessels, while other drugs exert their action chiefly or exclusively upon the muscle of the heart. Applying the terms of Ehrlich's side chain theory, Langley considers the receptor substances as side chain molecules of the contractile substance of the muscle.”

Local Effect of Peritoneal Drainage.

Drainage, after abdominal operations, continues to be the subject of perennial controversies. On the one hand, are certain enthusiasts who find their mortality diminish in direct ratio to the thoroughness of drainage; on the other, some surgeons point out drainage has its individual dangers. Indeed, some surgeons insist that ordinary means of drainage do not drain, and Yates, by experiment, demonstrated that the drainage removed only such serous fluid as accumulated from the irritation of the tube. The *Medical Record* notes:

“Admitting, then, the futility of attempting drainage of the general peritoneal cavity, as well as its possible injurious effects, it remains to be seen how we can best employ localized drainage. It is quite evident that best results will attend the rapid isolation of the affected area, and this should be accomplished with the least injury to the peritoneum and the least restriction to the normal functions of the viscera and to the early and complete restitution of the abdominal conditions. The drainage should, therefore, come in contact only with the surface to be drained, and in passing out of the abdominal cavity should come into relation with the least possible extent of serous surface, and then only with that least likely to be functionally affected. In order to carry out the latter requirement, Yates suggests that, when

ever practical, the drain be placed between the omentum and the parietes. In addition, everything must be done to promote abdominal quiet for at least twelve hours, in order to favor the formation of encapsulating adhesions. At the end of twenty four hours, the core of the drain, which should be constructed on the Mikulicz tampon principle, may be withdrawn, and then the remainder as soon after as the conditions indicate.

"These experiments emphasize a belief which is gaining many adherents, that any foreign body placed in the abdominal cavity in the presence of an infection is prejudicial to peritoneal resistance, and we must learn to depend on the latter more than on any mechanical means to overcome inflammatory processes, known ordinarily as peritonitis. When there is nothing to be gained by making an infectious area extraperitoneal, or when the path of a drain can not be made to afford a passage of least resistance leading outside the body, there does not seem to be, judging from Yates' experiments, any justification for its use, aside from hemostasis."

Nitrogenous Food.

The subject of nitrogenous food is being discussed from all sides. One of the best editorials is found in *American Medicine*, February 24, 1906. The writer declares that the proper daily amount of nitrogen to be taken in health is a problem of different character from those in diabetes or consumption. To quote:

"There is a beginning suspicion that he has evolved a mechanism for utilizing carbonaceous substances for fuel, and that if he becomes too highly carnivorous, he has insufficient apparatus to get rid of the products—urea, uric acid, and the like—which collect and overburden the tissues, giving rise to many abnormal symptoms. They resemble the clinkers of a furnace which is fed upon improper fuel containing too much solid residue—man, indeed, might be compared to an engine which burns oil and which has no mechanism for removing ashes, only flues for the gaseous products. So the opinion grows that man needs only enough nitrogen to keep up the repairs of the cellular protoplasm—and that very little will suffice for this purpose. It is not a coal, but can be compared to the iron and steel used in repairing an engine—very little in comparison to the tons of carbon and hydrogen used for energy. From an examination of hundreds of dietaries, there had been a general acceptance of Voit's estimate of 118 gm. of proteid for a man in moderate work, and as much as 145 gm. in hard work, though hard-working frontiersmen, soldiers, and teamsters in America have been known to take much more. Several physiologists, both in

Europe and America—the most prominent being Prof. Crittenden of Yale—have conducted numerous experiments which have led them to a firm conviction that Voit's estimates are more than 100 per cent higher than they should be. It is asserted that 50 gm. a day for a man at moderate work will supply all the nitrogen needed, and that the organism is much more vigorous from the fact that there is less work of nitrogen excretion. The carbohydrates and fats will supply all the energy needed and can be varied in amount to suit, and the results of combustion are merely water and carbonic oxid, which are easily carried off. If these new theories prove to be correct, they certainly will cause a great economy in our food bills, whose chief expenses are in the nitrogen-bearing articles."

The Newest Cure for Consumption.

"Some reformers propose to cure all social ills by the simple plan of making sufferers from incurable diseases incapable of propagating their kind. The remedy is to be applied not only to lunatics returned to society as 'recovered,' and to epileptics, idiots, imbeciles, cretins, and weak-minded persons under restraint, but sufferers from leprosy, cancer, venereal disease, and advanced organic disease of the heart, lungs, or kidneys. Castration in such cases is suggested, not for the benefit of the sufferer, but of society. But the operation has been practiced as a cure for various diseases. We do not speak of cases like that of Origen, who mutilated himself by way of radically curing the weakness of the flesh; his example has been followed by certain religious sects in Russia and elsewhere, but this heroic measure belongs to the spiritual, not to the surgical, domain. It is not so long ago however, since castration was put forward by some surgeons as the ideal method of dealing with enlargement of the prostate. Little is heard now of the method, which has been superseded by others less repugnant to the average sensual man. Quite lately castration has been proposed as a cure for consumption. At the Tuberculosis Congress held in Paris last October, Dr. de Backer said that the only cure for consumption is fattening up the patient. Every method of fattening, according to him, should be based on the principle of gaining as much as possible without losing anything. We gather that it is to the cattle breeder, rather than to the doctor, that we should apply in order to learn how to fatten consumptives. Dr. de Backer describes how fowls are fattened for the market. They are shut up so that they can not move, and are often deprived of light; they are fed to excess, and they are gelded. The three features in the system are, therefore, absolute rest for lungs and muscles, overfeeding, and compulsory chastity. Clearly, however, it is not so much in the compulsory chast-

ity as in the removal of the testicles that the virtue of the plan resides, for, as Dr. de Backer himself points out, "the eunuch is more easily fattened than the complete man, the ox more than the bull, the capon than the cock." If this cure establishes itself in professional favor, a new and highly promising territory will be opened to the enterprise of the surgeon. Consumption is one of the few spots on the map of disease that surgery in its march of conquest has left to medicine. Is that too to be taken from it by the ruthless invader?"—*Practitioner*.

The Habitual Use of Purgatives.

The *Medical Record*, December 9, 1905, deplors the purgative habit, which arises usually because it is so much simpler to take a pill at night than to follow a dietary regimen. Attention is again called to the variability of the number of stools in different individuals which constitutes health.

Jürgensen is given as authority for condemning the daily administration of purgative agents. To quote:

"The distinction between permissible and non-permissible laxatives must be drawn with greatest care. Ewald has stated that only those laxatives are satisfactory that produce mushy non watery stools, without any discomfort, such as griping and discomfort. Jürgensen goes still further and avers that such agents intended for routine use must act without giving rise to any unnatural collateral effects whatever, that is, without even disturbing the normal consistency of the movements. Another point of importance is the matter of dosage. Laxatives must never be prescribed in a fixed dose if intended for repeated use. The amount to be taken must always be determined by experiment in each case, and the minimum quantity which will produce a perfectly comfortable, formed stool is the proper dose. Many cathartics, perhaps most of them, exhibit only the two extremes of action, and either are without any effect at all or, if the dose be increased by even a very little, cause liquefaction. If no golden mean can be obtained such agents should be discarded from the treatment of chronic constipation, and only those that can be made to exhibit a more nearly natural action should be used. The various mechanical, electrical, and dietary measures are termed by Jürgensen the hygienic purgatives, while those belonging to the realm of pharmacology, he says, are distinctly antihygienic."

Attention is called to the view recently expressed by Schmidt, that in chronic constipation the food is exhausted to an extreme de-

gree as compared with the normal condition, so that the residue is hard, dry and too small in amount. The deficient motor activity of the intestine is secondary to this digestive disorder. We quote again:

"Schmidt's idea is that if the cause of the constipation is the, so to say, overdigestion of the food, an effort must be made to render the amount of residue greater. This is usually attempted by the addition to the diet of coarse articles of food, such as whole wheat bread, nuts, fruit, etc., often without much effect. Wholly indigestible materials such as sawdust, bran, and sand have also been tried, but although they may render the intestinal residue more bulky they do not cause it to be softer or moister, which are the essentials for easy evacuation. A substance which fulfills both conditions and increases not only the actual volume of the stools, but also their moisture, while without being in any way injurious or irritating, is the agar-agar of the bacteriological laboratory. This absorbs water freely and then swells up, but is practically indigestible. Schmidt has found that if small amounts of this, 10 to 20 grains, finely chopped, are added to the food the consistency of the feces is altered for the better to such an extent that many cases of chronic constipation may be relieved in this way. Another agent that has a similar but somewhat less effective action is vaselin, and often a combination of this with the agar is more satisfactory than either alone. In some cases, he admits, the increase in bulk and moisture effected by this means is insufficient alone to produce the desired result, and a small amount of some laxative, such as cascara, must also be given, to serve as an irritant stimulus to the intestine, but this need never be as large as would otherwise be the case."

ORIGINAL ARTICLES.

Acute Infection of the Urinary Tract in Infants.

By JOHN ZAHORSKY, M.D.

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For several years I have been teaching students that fever in the infant, with very rare exceptions (thermic fever, inanition fever, cerebral injuries, etc.), indicates an infection in some part of the body and it is the duty of the physician to ascertain the site of this infectious process and determine its character. The respiratory tract, the alimentary canal, the circulatory system, the nervous system, the osseous system and also the genitourinary tract must successively receive attention in searching for the infectious process.

It is the object of this paper to call attention again to the clinical picture of an acute fever in infancy dependent on a vesical or renal pelvic infection.

CASE 1.—E. T., girl, aged 3 1/2 years, was seen by me January 4th. The history was that she was restless during the night and had fever. When I saw her in the morning her temperature was 103°, she was unusually irritable and resented an examination. Nothing, however, was discovered on physical examination to account for the fever. The abdominal muscles were rather more rigid than one would expect, but as the child resented examination, this hyperesthesia may have been psychical. The mother had noticed no urinary symptoms, but telephoned me in the afternoon that the patient complained of pain on urinating. There had been no digestive disturbance.

Examination of the urine gave the following: Specific gravity 1016, albumin approximately 1/4 per cent; the urine was cloudy and did not clear up on the application of heat or the addition of acetic acid. Microscopically, numerous pus cells were found. The epithelia were mostly of the squamous, round or elliptical type. Casts were not found, but no prolonged search among the pus sediment was made.

The diagnosis was an infection of the urinary tract, probably vesical. The fever was irregular and lasted three days, when it declined rapidly. Another examination of the urine, two weeks later, gave no reaction for albumin but some pus corpuscles were still present, otherwise the child seemed perfectly well.

CASE 2.—V. H., girl, aged 1 year, rather pale looking, had a sudden fever last Christmas which I first attributed to a slight tonsillitis, but which had a tendency to recur at irregular intervals for ten days. Vain search was made for signs of infection in the ear or in the chest. Finally, on the fifth day I obtained a specimen of urine. The cloudy urine at once gave a hint that the trouble was in the urinary tract. It contained about 1/5 of 1 per cent albumin and numerous pus cells. Numerous vesical cells were also found in the sediment. The fever disappeared in about ten days, but one month later a trace of albumin and a few white blood corpuscles were still present. This infant was breast-fed and had slight digestive disturbance when the fever began.

CASE 3.—This was an infant, aged 16 months, also a female, very anemic, with no history of digestive disturbance. The temperature rose to 104° once and on several days 103° was reached. Altogether

this infant had fever at intervals for two weeks. The diagnostic symptoms were restlessness and rather more frequent urination. The urine examined was similar in contents as those just described, but contained many pyramidal cells. Two examinations only were made. Once the albumin seemed to be in sufficient quantity to justify the suspicion of a pyelitis or pyelonephritis. Three weeks after the onset of symptoms the urine still contained some albumin and a little pus.

CASE 4.—This girl was 2 years of age, to whom I was called on account of an acute illness. Rectal temperature ten hours after the onset 103.3°. The child was very restless and sleepless. The brother of the patient had an acute infection of the air passages, and after a careful examination I concluded that the patient also would show some inflammation of the respiratory tube. Nothing was found. No rigidity of the abdominal muscles and no urinary symptoms were discovered. The throat revealed slight congestion. A specimen of urine gave evidence of a urinary infection; albumin 1/10 per cent, specific gravity 1016, a moderate number of pus cells but very few epithelial cells. Two days later a marked bronchitis developed. No digestive disturbance was manifest at any time. With the onset of the bronchitis the temperature rose again but dropped permanently to normal on the fifth day. The cough persisted for ten days.

All these cases, besides giving a bath for the fever, or a dose of an antipyretic at the height of the fever, were treated by 1 to 2 grains of hexamethylenamin given two to three times daily. In one case an alkaline diuretic was also used. Helmetol was given in two cases.

Here there were four cases of genitourinary infection encountered in one month, showing that the disease may be very common at times. It would be easy enough to pronounce these cases malaria and cure them with quinin. None of the patients had pronounced urinary symptoms, that is, pain or frequent micturition. Only one patient complained of pain on urinating.

Escherich, Finkelstein and Trumpp have studied these cases. They found a colicystitis common after digestive disorders. How the bacillus coli enters the renal tract is by no means clear. Most cases occur in girls and all my cases were of that sex. I was unable to make a culture of the urine in my cases since the urine was not obtained under sufficient aseptic precautions. The rapid convalescence would

suggest a colon bacillus infection. Only one of my patients had a digestive disturbance.

Clinically it is by no means easy to differentiate a pyelitis from a cystitis. No doubt, a cystitis and pyelitis often occur together. The urine was acid in all my cases and has no diagnostic significance. The albumin in the acute stage of the infection is much larger than would be suspected from the presence of pus. It is rather difficult or at least laborious to try to hunt out epithelial cells in the pus and attempt to judge from them whether the pelvis of the kidney is also implicated. Unless the albumin is large in quantity and casts are also present suggesting a pyelonephritis, it will often be impossible to state how much of the urinary tract is involved. A cystoscopic examination might decide but no practitioner would suggest it except in very rare instances, for obvious reasons.

Hence, in many cases the clinical diagnosis must be merely an acute genitourinary infection, just as in many cases of alimentary disturbances we speak of a gastroenteric infection without localizing the the inflammatory process to a definite area. Unless tenderness or a swelling appears over a kidney, it will often be impossible to state whether or not the ureter or one pelvis may not be implicated. The persistence of an irregular fever for some days or weeks would point to a pelvic infection.

A few words as to rapid clinical diagnosis:

In a given case with febrile symptoms and no sign of infection elsewhere the urine should be examined at once. If the fresh urine is cloudy and does not clear up on heating (a tablespoonful heated over a lamp, in the absence of a test tube) or the addition of a little vinegar, the presence of pus may be safely assured. The discovery of albumin in moderate amounts would confirm the diagnosis. Of course, a more careful chemical and microscopical examination of the urine should later be made in your laboratory. The disease may be strongly suspected if the infant urinates more frequently or has pain, but the absence of these symptoms should not lead us to exclude the disease. A restlessness and tenderness of the lower abdomen is also a suggestive symptom. The presence of many conical cells would point to a pyelitis. Only one of my cases showed these cells in sufficient number to suggest an infection of the kidney pelvis.

[1640 South Grand Av.]

MEDICAL DIGEST.

DEPARTMENT EDITORS.

Dr. M. A. Bliss, Neurology.	Dr. Adrian Bleyer, Internal Medicine.
Dr. H. N. Chapman, Electrotherapy.	Dr. Carl Fisch, Bacteriology and Pathology.
Dr. W. L. Johnson, Diagnostics	Dr. M. J. Lippe, Pediatrics.
Dr. Philip Newcomb, Therapeutics.	Dr. J. C. Salter, Physiology.
Dr. C. D. Scott, Dermatology.	Dr. L. M. Warfield, Experimental Medicine.
Dr. O. A. Wall, Jr, Pharmacy and Materia Medica.	

Cerebral Localization.

Every student makes a strenuous attempt to master cerebral localization in his school days. We still remember our professor holding a small doll, head downward, over the Rolandic fissure on a drawing of the cerebral cortex, and in this practical manner impressing us with the situation of the different motor centers. For a long time, impressed by the original teachings of Gall and the animal experiments of Hetzig and Fritsch, the investigators sought circumscribed areas of the brain which preside over definite portions of the body.

According to Howell (*Maryland Medical Journal*, March, 1906):

"The general idea of localization of function has been established definitely, but the modern view is that the cerebrum is composed of a plurality of organs, not completely separated one from the other, but intimately associated to a certain extent dependent one on the other for their full functional importance."

In regard to localizations accepted at the present time Howell continues:

"The precentral convolution is the true motor area of the cortex. It extends from the fissure of Sylvius anterior to and along the fissure of Rolando. It is characterized histologically by Betz cells. In front of this, in the posterior part of the third or inferior frontal convolution, is Broca's speech center, and above it the center for writing. Close to and in front of these areas are the memory centers for motor acts. Lying more forward are the frontal areas, and further forward are the prefrontal areas, to which all evidence in recent work attributes the highest seat of mental power. Dr. Bolton's work on dementia shows that the focus is greatest in this region. V. Monakow insists that the 200 cases from which Dr. Bolton's conclusions were drawn are not

sufficient basis for his conclusions. There has been a great deal of controversy from the adherents of both sides of the question, and both sides have cited the celebrated crowbar case. Going back from the Rolandic fissure is the post central convolution, which is the area for the body senses. The evidence is conclusive that this area functions in this way, for Campbell has shown that in the degeneration in tabes it is this area that is affected without involvement either backward or forward. Whether or not pain and temperature senses are localized here has not been determined. At any rate, injury here dulls, but does not destroy completely the pain sense; so there must be a participating subcortical center. The optic fibers end around the calcarine fissure; so a lesion in this region on the occipital lobe results in a hemianopic condition. V. Monakow thinks the fibers from the fovea centralis have a distribution over the whole occipital lobe. The center for hearing is also satisfactorily determined. It is situated in the first temporal lobe near the fissure of Sylvius. The evidence from physiologists in regard to this area has been contradictory, but the anatomical evidence is most satisfactory. The location of the olfactory center depends on histological evidence, which tends to show that the chief cortical termination of the olfactory paths is found in the hippocampal lobe, especially in its distal portion, the uncinate gyrus. The evidence for the location of the taste center breaks down altogether. It is usually assumed that it lies in the hippocampal convolution posterior to the area olfaction, but there is no definite evidence for this location."

Concept of Pneumonia.

Dr. Andrew H. Smith (*Medical Record*) suggested the following beautiful concept of an average case of pneumonia:

"Granted that the patient, to begin with, was one of the multitude who had pneumococci on the mucous surface of the air-tubes, and, granted that the conditions had become favorable for their development, a peculiar, specific irritation would be set up, in response to which a peculiar fibrinous exudation would take place into the air-cell. This exudate would constitute a culture medium exactly fitted for the growth of the parasite, which would immediately begin its multiplication, and the formation of its appropriate toxin. This toxin, being taken up into the blood, would produce systemic effects proportional to its amount and virulence. The exuded material constantly increasing in amount would overflow into adjacent cells and adjacent lobules, carrying the infection with it, until a sufficient area was involved to give rise to appreciable physical signs. The advent of those signs would be earlier in proportion as the observer was a competent aus

culturator, and was thorough in his examinations. The proportion of toxin in the exudate would increase until the latter became unfitted to act longer as a culture medium, when the further growth of the parasite in that immediate locality would cease. Meanwhile the pressure of the exudate, aided by the coagulating effect of the toxin, would have brought about arrest of circulation in the capillaries derived from the pulmonary artery, and the functions of the part would be completely suspended. The nutrition of the tissues, however, would continue to be provided for by the nutrient capillaries derived from the bronchial arteries, and, having the greater power of the left ventricle behind them, gangrene would be averted. So long as fresh areas of lung were being invaded, so long would the systemic disturbance continue; but when the formation of toxin in the zone last invaded had ceased, there would be a cessation of the general toxic phenomena, and a fall of temperature, marking the crisis. There was evidence going to prove that the crisis was hastened by the formation of an antitoxin in the infected tissue as a secondary process. As soon as the active process in a given location had ceased, a process of repair was set up, in which the nutrient vessels and the absorbents were the principal agents. As the result of this process, the exudate became liquified and was removed, partly by expectoration, but mostly by absorption. As this was accomplished, the circulation through the functional vessels was resumed, and the part was restored to its normal condition."

Treatment of Paralysis Agitans.

It is too true that patients suffering from paralysis agitans are usually placed in incurable hospitals and little or no relief is undertaken. Yet, often, something can be done to ameliorate this distressing condition. Says the *Practitioner* :

"This subject is dealt with in the therapeutic section of the *Deut. Med. Wochenschrift*, October 26, 1905. The writer points out that isolation often causes the patient to concentrate his attention upon his trouble. Physical methods must be employed with great discretion; washing, warm baths, and friction must be carried out with much gentleness, while massage is out of the question. Passive movements, on the other hand, are able to make the tremors disappear during such time as the séance lasts, and only in the part actually under treatment; but, in addition to this effect, something is done to oppose the onset of rigidity. It is a good thing to have several séances every day, each of five to ten minutes' duration. Active movements are seldom required.

"Some cases get benefit from the four-celled electric bath, or bipolar faradism. Suspension and stretching the nerves only do the patient actual harm, and Charcot's *fauteuil vibrant* is useless.

"The following are recommended for internal treatment: — Tincture of veratrum viride and gelsemium sempervirens in small doses; hydrobromid of scopolamin by hypodermic injection, beginning with doses of 0.0001 gram, grain $1/640$, is a most efficacious remedy. It is necessary to find out, by cautiously and slowly increasing the dose for each individual, the amount which is active without giving rise to toxic effects. When this is once determined, the drug may be given for a year, or more, without losing any of its good effects. Hyoscin produces similar effects in some cases, and less minute doses are necessary than in the case of its congener; it influences tremor and muscular rigidity specially.

"Mental treatment is most usefully directed toward keeping up the patient's courage and ridding him of his fancies. Hypnosis has been of good effect. Opothrapy has proved to be of no avail.

"Higier gives a daily dose of hyoscin, grain $1/320$ to $1/200$ in a pill before the mid-day meal. An hour's sleep results after the meal followed by three or four hours' freedom from tremor. Continued treatment results, as a rule, in persistent lessening of the tremor."

Intubation in Diphtheria.

Very recently, Dr. E. W. Saunders, in a very excellent and highly commendatory monograph has called attention to this growing tendency of the profession to postpone interference for the relief of stenosis of the respiratory tract occurring in the course of the disease. He feels confident the present mortality rate is kept unnecessarily high by this—which he designates, pernicious—custom. Dr. Saunders states that those who procrastinate in the treatment of true croup not only err in putting a false estimate upon the function of antitoxin, but also in failing to take into account all the elements of danger in these cases. He makes a plea for early intubation.

In the discussion which followed the presentation of Dr. Saunders' paper, Dr. McCollom emphasized the fact that intubation should be performed just as soon as difficult breathing becomes present. A rigidity of the stenocleidomastoid muscles can be seen and felt, and its presence should warn the medical attendant that intubation should be promptly resorted to; he should not delay until the symptoms become manifest. Dr. Saunders has certainly called attention to a very

important and much neglected subject. It must be admitted that we have expected antitoxin to remove all of the distressing symptoms, no matter what the stage of the disease. We remember the fact that intubation in these cases not only protects the heart but the entire organism. Dyspnea must, and can be relieved.

Dr. Saunders resorts to tracheotomy—preferably the high operation, performed with the patient in the sitting posture: 1, Unrelenting spasm of the glottis; 2, cases where the introduction of the tube is not followed by coughing, or prompt relief; 3, cases with extensive membrane in the fauces; and, 4, in cases apparently moribund.

The Bromids in Epilepsy.

The value of potassium bromid was first established by Lacock (England) in 1851. English and French physicians corroborated its clinical value, but several eminent practitioners failed because they used too small doses. In 1866, Voision and his successor Fabret at Bicetre in a large number of cases found that the favorable action of the drug does not begin to be felt until the daily dose of 4 grams has been reached. The usual doses was 7 to 9 grams in 24 hours. Symptoms of bromism were indicative of an effective therapy.

Trousseau began in 1864 to treat epilepsy by giving small doses of the bromid (grain $\frac{3}{4}$ to grains 17). Later, by the use of 6 to 9 grams daily he obtained more striking results. From this early experience various clinicians have even proposed very much larger doses of various bromid salts. A reaction, however, is setting in.

Frederick Peterson (*American Medicine*, June 24, 1905), says he is convinced that a great many more epileptic patients have been injured than have been benefited by bromids:

"A dirty, yellow color, hollow eyes, fixed look, expressionless face, emaciation, tottering limbs, trembling hands, general cachectic state, loss of appetite, bromid acne, foul breath, engorged and dry throat, loss of sensibility of the palate, constipation, pulmonary catarrh and cough, drowsiness, loss of memory, is the picture, Peterson says, drawn of these patients back in the '60's, and which now describes most of the thousands of patients admitted to Craig Colony or treated at Vanderbilt. He has seen bromid dementia and speaks of toxic insanities, melancholia, mania or paranoid conditions produced by the drug.

"When the drug is employed it should be in small doses com

bined with antipyrin, tincture of simulo and horse-nettle, or used in the form of bromized oil which is less toxic.

"Far better, Peterson says, would it be to prescribe a mild stomachic and laxative together with a rational diet and active out-door exercise, which will bring about a 50 per cent reduction—and some few cases, possibly 10 per cent may be cured."

Early Infection in Tuberculosis.

"Much has been written and denied regarding the possibility of tuberculosis that develops in adults being due to infection during childhood. Certain writers insist upon the frequency of intrauterine infection, though in general this is made less prominent than formerly. There appears a growing tendency, however, to attribute considerable significance to the etiologic role in pulmonary tuberculosis of primary lymph-node or intestinal infection. This brings up the question of latent infection, especially the extent of its duration and the probability of childhood infection. A most valuable communication upon this subject is that of Dr. Harbitz, who presents the results of extensive personal study and a summary of Scandinavian literature not hitherto widely known. In Leipzig, Harbitz examined the bodies of 30 children dying before the age of 15 and found tuberculosis in 9, 30 per cent. In Christiani, 275 autopsies revealed tuberculosis in 117, or 42.5 per cent of the subjects. These figures are high, but in the last 142 of the 275 cases, the percentage reached 48.6. Of 117 tuberculous subjects, 72 died of tuberculosis, 21 had latent or obsolete tuberculous lesions, and in 18 latent tubercle bacilli were present. Of these 18, 9 were under 1 year and 14 under 3 years. Of the 123 subjects under 1 year, 25 were tuberculous and 98 non-tuberculous. From a study of these cases, and also of tuberculosis in adults, Harbitz says the duration of latency in chronic tuberculosis of lymph-nodes may safely be placed at 20 to 30 years, and probably is considerably longer. Hence, he maintains that pulmonary tuberculosis in adults may be and often is secondary. 'The cause is then to be sought in tuberculous foci in other organs, but mainly in the lymph-nodes, and infection of the lungs occurs most likely by way of the blood (from the thoracic nodes the infection might also easily occur through the lymphatics). With my observations in mind (including the latent bacilli in children), I also believe I may maintain that much more stress must be laid upon primary infection through the digestive tract, and not least on infection through the throat than has been done formerly.' The entire work of Harbitz bespeaks thoroughness, and his deductions are so well supported by facts, that his paper must be regarded as one of the most authoritative of recent contributions to this subject."—*American Med.*

The Treatment of Scarlet Fever.

Seibert (*New York Med Monat.*) still adheres to the ichthyol treatment of scarlet fever. He recommends that a 5 to 10 per cent ichthyol-lanolin ointment be applied to the skin two to four times daily. For the nose and throat the author uses a 50 per cent resorcin alcohol solution, which is applied to the diseased surfaces twice daily. The glandular swellings rapidly subside under these applications.

Lararow (*Deutsch. Med. Ztg.*, 1905) also contributes an article on the ichthyol treatment of scarlet fever. His success in a very severe epidemic was gratifying. The disease is shortened and desquamation hastened, but it is necessary to use the applications before the height of the eruption in order to obtain the results. He uses the following formula:

R. Ichthyol..... 2.5
 Aquæ distil.....
 Glycerini.....aa 25.

M. Sig.—Apply to the body with small brush twice daily. This treatment is continued for two days.

The pilocarpin treatment of Saunders does not seem to have, as yet, received much recognition. All of his students, however, who have tried it, to any extent, are enthusiastic as to its merits. The salivation and diaphoresis assists in excreting the toxin and saves the kidneys, while the stimulating effect on the leukocytes is also beneficial. The drug should be given internally every three hours in sufficient dose to give the physiological effect (dose grain $\frac{1}{32}$ to $\frac{1}{8}$).

Ichthyol has also been recommended to be given internally in this disease.

The recommendation of Widowitz that urotropin (hexamethylen-amin) be administered internally in order to prevent the most dangerous complication of scarlet fever, namely nephritis, has received considerable attention, but it is by no means established that this drug accomplishes what was claimed for it originally. Several recent authorities in studying its effect ascertained that this complication was not obviated. Even Kornel Preisich (*Therap. d. Gegenw.*, 1905) in studying 600 cases treated with urotropin and 600 cases without this chemical, found nephritis in 9.16 per cent of the former series, while in the latter group 13.6 per cent were affected. The difference is not sufficiently large, in our estimation, to prove the value of this treatment.

Congenital Laryngeal Stridor.

Koplik (*Archives of Pediatrics*, December, 1905) reports a case of laryngeal stridor that occurred soon after birth and continued until the infant was a year old, death occurring from a bronchopneumonia:

"The thymus was large and weighed 25 grams. The epiglottis was curved backward and lay over the superior opening of the larynx. The lateral borders of the epiglottis were in contact, leaving a slit which raised from half a millimeter in its greatest extent from the tip of the epiglottis to a millimeter and a half at the arytenoid cartilages, where the space between the aryepiglottic folds was a little wider than above. The aryepiglottic folds were almost in contact and were membranous. The larynx presented nothing pathological except that attempt to introduce the smallest size one year intubation tube into the box of the larynx could not be carried out without great force. There was no membrane, inflammation or swelling.

"The thymus in this case in no way was demonstrated to press on the trachea and the anatomical conditions of the larynx and epiglottis fully accounted for the production of the stridor.

"In the cases of Gees, Refslund, and that of the author, there was marked distortion of the epiglottis and larynx, and it would be going out of our way to draw the thymus into the picture."

The question of the etiology of enlarged thymus in these cases, "thymic asthma" so called rests merely on clinical life study of cases. The evidence of marked anatomical changes in the cases above referred to gives us something definite to go on and is sufficient to explain the physical signs and symptoms and helps clear up a condition about which we have been much in the dark.

Purgatives and Quinin in Malaria.

Clinical evidence is almost a unit in certain malarial regions that an initial purgative is necessary in the treatment of malaria. Some administer calomel in large, repeated doses. Jalap and podophyllin are favorite drugs with others. Leptandrin is also extensively used. It is well to know that the saline cathartics are also useful and possibly just as effective. Several years ago Simpson, of India, (*New York Medical Journal*, June 25, 1898) briefly reported his experience with thousands of cases. The following is his method:

"The types of disease met with are: 1, Quotidian; 2, tertian; 3, quartan; 4, weekly; and, 5, fortnightly—enumerated in the order of their frequency.

"In all recent cases the following mixture was given except when diarrhea was present:

R. Magnesium sulphate..... ℥ss
 Solution of ammonia acetate..... ℥j
 Quinin sulphate..... gr xv
 Camphor water..... q. s. ad ℥viiij

M. Sig.—Two tablespoonfuls every four hours.

"Occasionally the treatment was started by a brisk purge, calomel and jalap by preference.

"If diarrhea was present, opium and quinin were given, preceded by a warm draught of rhubarb, soda, and ginger with a carminative.

"In ninety per cent of the cases this method of treatment was successful, and in most cases a second attack of fever did not come on.

"In chronic cases he prescribed:

R. Magnesium sulphate..... ℥ij
 Quinin sulphate..... gr. xij
 Iron sulphate gr. vj
 Dilute sulphuric acid..... ℥ij
 Tincture of ginger..... ℥iij
 Camphor water..... q s. ad ℥xij

M. Sig.—Two tablespoonfuls two or three times a day."

Epidemic Megalerythema A Fifth Eruption Fever.

Cheinnisse (*La Semaine Med*, May, 1905) describes under this name a disease, which, though little recognized in other countries, has been studied in Austria and Germany, under the symptoms of acute infectious erythema, infectious morbilliform erythema, and erythema simplex marginatum.

It occurs always in epidemic form and associated with epidemics of measles or rubeola, attacking children between 4 and 12 years of age. Incubation varies from six to fourteen days, (Escherich), while that of rubeola is seventeen to twenty four days. Usually without prodromata, the eruption occurs in the midst of health, affecting only the skin, the mucous surfaces escaping, commencing on the face, especially that part of the cheeks where the skin is red, strictly limited in front by the nasolabial furrows, behind a line in front of the ears; the

chin remains pale. It consists of large spots of pale pink or violet red with a prominent edematous center, which, at the end of forty-eight hours fade in the center, become brownish-gray, and disappear without scar, desquamation or pigmentation.

A similar eruption occurs on the limbs, beginning near the trunk, so that the hands and feet are attacked last, occupying preferably the outer surface, the size of the spots being sometimes as large as the palms. As retrogression takes place from the center to the periphery, red rings with a center of pale, normal skin, frequently result. The trunk is usually free, some discrete patches on the chest and back. No glandular enlargement, no catarrh. Total duration six to ten days; relapses sometimes occur. Differential diagnosis easily made—from rubeola, in which the trunk is early affected and glandular enlargement constant; measles, which affects the mucous membranes; from scarlatina, by the character of the eruption, etc.; pityriasis rosea, where there is pruritus and an embossed appearance of the spots.

Dry eruptions have not the same distribution. Erythema multiform is more difficult to distinguish; the localization to the hands, the feet, the nape of the neck is characteristic, and the affected parts remain cool, whereas the temperature of the regions attacked by megalerythema is, on the contrary, raised.—*British Medical Journal of Children's Diseases*.

Quinsy and Its Sequelæ.

Dunn, Richmond, Va., (*Virginia Semi Monthly*, January 12, 1906): The knowledge of this disease by the very fathers of medicine in the dawn of its history is referred to and the advancement made in this knowledge is dealt with. The author wonders that this disease is not even commoner considering the proximity of that exposed lymphatic tissue, its liability to infectious disease, the ease with which in earlier life it becomes hypertrophied and the fight of the system against this. The tendency to recurrences is mentioned. He believes that generally this tendency has more than a local significance "and indicates a depraved general condition in the production of which inheritance has played no small part."

The question of contagion is mentioned and the author cites an occasion when he had four cases in the same household at the same

time. He asks why in these four cases the infectious agent should seek the peritonsillar tissue. The suggestion is made that in these four cases the micro organism was the influenza bacillus, and it is further suggested by the author that we must suppose the pre existence of conditions favorable to the development of quinsy. He believes that the inflammation "originates in the tonsil itself," and he says that removal of the diseased tonsil to prevent the recurrence of the quinsy upholds this belief. Two cases are cited and the course of the disease is briefly described. Of the sequelæ the author says that he has found very little in the literature on this subject and he himself has nothing to report. He says that we occasionally hear of suffocation following rupture during sleep, and that some cases of disastrous bleeding have been reported, but he believes that "These conditions are, however, rare and has each its own distinguishing symptoms."

DIAGNOSIS AND TREATMENT.

Miller, Richmond, Va.: A picture of a typical case of quinsy is given and the subject of differential diagnosis is taken up. Of the treatment prophylaxis is first mentioned and is said to consist of "the relief of any constitutional dyscrasia" and the removal of enlarged or adherent tonsils.

Abortive treatment is next taken up, the author advises an incision in the peritonsillar tissue to reduce local congestion, rest in bed, saline purge and internal administration of guaiacum together with the ice bag externally. Gargles may do more harm than good, if painful, but if the patient can use them without discomfort they may give much relief and hasten recovery. Hot water is as good as any gargle.

Lastly "curative" treatment is discussed. This is after the abscess has formed. "Evacuate the pus and drain." The location of the abscess will determine the site of the incision. Most frequently, he says, the abscesses point in the soft palate about a half inch external to the uvula. "My own incision of choice, in an anterior pointing abscess, is the usual one beginning on a level with the base of the uvula and one half inch external to it and going downward and slightly inward for about one half inch." This will usually find pus, if it doesn't exploration should be made with a narrow bladed dressing forceps, not with the bistuary. He then advises washing out with a r

to 100 carbolic acid solution. Mechanical drainage is seldom necessary, if it should be so a small gauze wick may be left in for twenty-four hours. After twenty-four hours the abscess should be mopped out with hydrogen peroxid and then freely swabbed with a 20 per cent argyrol solution. This treatment, he says, will suffice in a few days. Hot poultices and hot gargles used immediately after the incision may give relief and hasten recovery. The author believes that the tonsil should never be removed during an acute attack even if pushed inward and away from its pillar by a peritonsillar abscess.

The Treatment of Uncinariasis.

Loos seems finally, in a conclusive way, to have demonstrated that the larvæ of the ankylostoma penetrate the skin and reach the intestinal canal through the circulation. That the American variety, *Uncinaria Americana*, takes a similar way to reach the duodenum is emphasized by the established fact that ground-itch precedes the intestinal trouble.

Thymol in 15 grain doses is the established form of treatment; but Phillips (*Lancet*, February 3, 1906) finds this drug in these large doses dangerous and by no means effective. He recommends the following formula, which he has used with good results:

R. Eucalyptus oil.....	gm. 2
Chloroform.....	gm. 3
Castor oil.....	gm. 40

The method of procedure is as follows:

A saline purgative is give in the evening and the patient fasts all night. On the next morning he takes half of the above mixture, and half an hour later, the other half. The doses can be somewhat increased. If depression follows the first dose the second is not given. The patient is kept in bed until his bowels moved freely.

SURGICAL DIGEST.

DEPARTMENT EDITORS.

Dr. E. A. Babler, Surgery. Dr. Geo. Gellhorn, Obstetrics and Gynecology.
Dr. M. G. Gorin, General Surgery. Dr. Phil Hoffman, Orthopedic Surgery.
Dr. W. A. Shoemaker, Ophthalmology. Dr. H. J. Scherck, Genitourinary Surgery.
Dr. Selden Spencer, Otology. Dr. J. A. J. James, Rhinology and Laryngology.

Chorion Epithelioma.

In 1889 Sauger¹ described a very instructive and interesting case of malignant disease of the corpus uteri possessing a sarcoma—like structure which followed an abortion at the eighth week. He believed that the tumor belonged to the sarcoma family and it developed from the decidua, hence he applied the term deciduoma malignum. Four years later he collected 11 similar cases from the literature. In 1895 Fränkel² presented an excellent monograph describing the cellular origin of these tumors, and calling attention to the proliferation of the syncytium and of the cell layer of Langhans. It was about this time that Veit, Marchand, and others presented their findings upon the subject. Veit maintained that deciduoma malignum was a sarcoma growing in a uterus which had recently been the seat of a pregnancy, while Marchand³ and his followers contended that it was a tumor of an epitheliomatous nature derived primarily from the undifferentiated trophoblast, that is primitive fetal ectoblast, and containing cells representing both the syncytium and the layer of the Langhans, or the outer coverings of the villi into which the trophoblast ultimately becomes developed.

In 1903, Teacher⁴ collected 188 cases and studied the subject very thoroughly. His excellent monograph is very convincing. He concluded:

1. That the so-called deciduoma malignum was a tumor arising in connection with a pregnancy and originating from the chorionic epithelium (or its forerunner the trophoblast) which is of fetal origin (the view of Marchand).
2. That these tumors form quite a characteristic group clinically, pathologically and developmentally, and that they should be classified neither as sarcomata nor as carcinomata, but as a distinct group *sui generis*. The most appropriate name being chorion epithelioma.

Malignant hydatidiform mole might be treated as a variety of this disease

3. That in addition to the common tumor developed from a pregnancy there were tumors containing precisely similar structures which are not connected with a pregnancy and which might occur in other parts of the body than the uterus in either sex. The most probable explanation of them was that they are teratomata originating from some structure which has the morphological value of an included ovum and the chorionic epithelial tissues represented by the actual trophoblast of the included ovum.

Findley⁵ has recorded one case and collected twenty others of primary chorion epithelioma arising in woman outside the placental site. In not one of these cases was there a direct anatomic connection between the tumor and the placental site demonstrable. Findley found that in 50 per cent of the cases the vagina was believed to be the primary seat of the tumor. In some instances it was not possible to demonstrate the site of primary growth.

At the present time Marchand's theory is the one most generally accepted. Herzog describes the affection as a degenerative malignant disease of the sarcomatous type, originating in the decidual structures of the pregnant woman, and tending to a rapidly fatal issue. He adds, however, that they should be classified under epiblastic epithelial neoplasms.

Bland,⁶ Savage,⁷ Wilson,⁸ and others, have recently recorded interesting cases of chorion epithelioma. The disease is of more frequent occurrence than has been suspected. In by far the greater proportion of the cases the tumor follows a pregnancy, an abortion or the evacuation of a hydatidiform mole. In, perhaps, half of the cases of hydatidiform mole a chorion epithelioma eventually develops. As a rule, the tumor is situated within the uterine cavity. The size of the growth is variable; in some instances it is difficult of palpation while in others it may fill the entire uterine cavity. Croom has recorded a case in which the tumor weighed 7 1/2 pounds. In the early stages, of the disease the growth is usually nodular and more or less firm; later it becomes soft and friable. At no time is there a sharp line of demarcation between the malignant structure and the uterine wall, as occurs in cases of retained placenta. Noble, and others, have recorded instances in which the growth perforated the uterine wall and involved

the bladder. A very characteristic feature of chorion epithelioma in the terminal stages is the tendency to early metastasis; in many of the recorded cases metastasis occurred during the early stages of the disease. The organs most frequently involved in metastatic deposits are the vagina, the lungs, the kidneys, the liver, the brain, and the intestines. Infection of the lymphatic glands is evidently rare. Teacher has found that in the study of chorion epithelioma it is quite necessary for proper appreciation to secure material which shows the growing zone of the tumor and the stages of cell metaplasia or cell division. He found that this material will show the three principal cells: The syncytium, large masses of protoplasm of various shapes, rounded, drawn out bands and whorls or irregular masses. The individual cell is regarded by Teacher as the primitive form and the syncytium is a modification of it. He holds that the tumor cells usually assemble in masses of some size and are attached to the uterine tissues.

The true etiology of chorion epithelioma remains somewhat obscure. Seventy three of Teacher's 188 cases followed mole, 59 followed abortion, and the remainder developed after a pregnancy. Pick, Jaffe,⁹ and others, believe that the overproduction of corpus luteum secretion plays a very important rôle in the causation of chorion epithelioma.

In Ladinski's¹⁰ 128 collected cases the tumor followed a hydatidiform mole in 51, an abortion in 42, a full-term labor in 28, a premature labor in 4. A few observers have attempted to explain the etiology of chorion epithelioma by means of Ehrlich's side-chain theory. They hold that normally a body exists which regulates the production of anticells or antibodies which latter are endowed with influences to prevent choriomatous formation. When, however, this body, which they designate syncytiolysin, is not produced in sufficient quantity, an undue proliferation of chorion cells occurs and chorion epithelioma follows.

The patient is usually in the second or third decade of life. In 124 cases collod by His the average age was 32. The disease may occur at any time between the seventh and sixteenth years. Marchand believes that the trophoblast may lie dormant for many years and then suddenly become active.

Symptoms.—Hemorrhage is, perhaps, the earliest, most constant and the most impressive symptom. It seems to appear without cause.

The patient can not account for it. It may be scanty or very profuse. A very striking feature is the fact that the usual remedies fail to afford relief. In Windsor and Fairbairn's patient the bleeding appeared in the second week following an apparently normal labor, while in Wilson's case it occurred shortly after the expulsion of a hydatidiform mole in a girl 22 years of age. In many instances the symptoms—especially the hemorrhage—appears a few days after an abortion or an apparently normal pregnancy. If the hemorrhage is irregular the patient will note a thin, somewhat watery discharge which latter becomes quite offensive as the disease advances. Anemia and emaciation appear, and are prominent symptoms. Simple vaginal examination may cause a severe hemorrhage. Curettement is of no benefit. Bimanual examination often reveals the increased size of the uterus. The cervix may be found dilated; at times it readily admits the index finger, in which case the character of the growth can often be made out. Pain may be an early symptom. In many instances it is not prominent. Prostration is usually quite severe. Fever may be present.

In the second stage of the disease all of the symptoms become more severe. During this stage a sudden severe pain may signify a metastasis in some distant part of the body. Symptoms of sepsis gradually develop.

Diagnosis.—The diagnosis must be based upon the previous history of the case, the hemorrhage, the age of the patient, the findings revealed by microscopical examination, and bimanual palpation. It may be stated that the mere fact that a patient, who has recently expelled a hydatid mole, complains of frequent hemorrhage from the uterus should arouse suspicion. Whenever thorough curettement fails to relieve the hemorrhage in a patient who has suffered a recent abortion the possibility of chorion epithelioma should be remembered. In any instance of irregular uterine hemorrhage a thorough, painstaking examination of should be made. A microscopical examination of the scrapings will often clear up the diagnosis.

The prognosis is always extremely grave. Early diagnosis and early proper treatment yield the best results.

Treatment.—Complete removal of the uterus at the very earliest moment is alone admissible. This, of course, necessitates early diagnosis. Findley says that if syncytial tissue is recognized in the scrap-

ings, the uterus should be removed. He concurs with Bonnaire¹¹ who say: "After a molar labor the uterus should be thoroughly cleansed and swabbed with creosote or with zinc chlorid; at the interval of 10 or 15 days the uterus should be curetted and the curetted material subjected to microscopical study. If, after these operations, atypical metrorrhagia persists, inoculation of the uterus with malignant elements should be considered probable, and the organ should be removed, even if unable to detect any intrauterine nodule or ulceration, by digital palpation or by microscopical examination of the scrapings." The subject demands further study.

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¹¹Ibid.

The Open Treatment of Burns.

One of the secrets of success in medicine is to know when and how to assist Nature. Only too frequently our failures are but emblems of unwise and unnecessary interference. We are prone to do too much rather than not enough. Our efforts are too frequently in the wrong direction. This fact is fully exemplified in the treatment of burns. Burns of large area are undoubtedly one of the most agonizing lesions to which man is subject. We are beginning to realize that our treatment has but added to the agony and dangers of the unfortunate sufferer. We have been helping to destroy rather than to cure our patient. Salves, powders, packs, baths, etc., are quickly passing into unsung and unhonored graves. More than eighteen years have elapsed since Copeland, of Alabama, called attention to the brilliant results secured by treating burns by the open method. The usual treatment had been first tried but without relief. Copeland then removed the dressings and placed the patient in comfort by exposing the parts to the air. Contamination from flies was prevented by means of mosquito netting. The pain quickly subsided and within a few days the parts were well.

Later, Wagner advocated treating chronic ulcers and granulating wounds by the open method. His results were very satisfactory. Shortly after the appearance of Wagner's monograph, Brünig tabulated his results attained by exposing grafted areas to the air. A few months ago Sneve called attention to the excellent results obtained by himself and others in the treatment of extensive burns by the open method. The results fully corroborate the contention of Copeland, that it is the ideal method. The patient is placed in a comfortably warm (to the patient) room; shock is combated after the method advocated by Mummery; the injured parts are exposed to the air; saline drinks administered; in severe cases stercate of zinc may be lightly dusted upon the parts; blistered are opened; exudates gently wiped away. It is unquestionably the ideal treatment. (See "Yesterday and Today," this issue).

Skin Grafting.

We have been told that the term "epidermic grafting," by which term Reverdin originally designated the procedure, is the only correct one, since "the epidermis by itself, but the living epidermis, that of the deep layer, is alone necessary for the success of the graft." At the present time the technic devised by Thiersch is the one most frequently employed. A few years ago Moyer presented an improved method of dressing these cases after the grafts have been placed. He encircled the limb by two collars of sterilized gauze wet with normal salt solution, one above and one below the site of the grafts. Strips of sterilized wood covered with gauze and long enough to reach from one collar to another were laid in place and fixed by gauze bandages. A "cage" was thus produced which prevented the subsequent dressings from coming in contact with the grafts. About a year and a half ago Brünig (*Zentralb. f. Chir.*, August 30, 1904) presented a report detailing the excellent results attained by exposing grafted areas to the air. A few American surgeons have since found Brünig's method to give very gratifying results. O'Brien and Brimball, of St. Paul, (*Jour. Amr. Med. Ass'n*, August 1, 1905), have, perhaps, done the best work in this line. At the present time a very prominent St. Louis surgeon employs a dressing of silver foil over which is applied gauze and cotton. The foil permits the due escape of the exudates while at

the same time protecting the grafts against contact with gauze, etc. The results are very satisfactory. The open method as advised by Brüning is indeed, very simple and the results very flattering. Either of the latter procedures eliminates the distressing features of former methods.

THE "COURIER" CLINIC.

Obstruction of the Cystic Duct Simulating Appendicitis.

Report of Three Cases.

By M. GEORGE GORIN, M.D.,

St. Louis, Mo.

Given abdominal pain and tenderness apparently localized, rigidity of muscular walls, vomiting, etc, it is not always an easy problem to make a correct diagnosis as to the affected viscus producing such symptoms. During the comparatively brief history of abdominal surgery at different periods it would seem, judging from the literature, that surgeons were were making concerted attacks on certain regions; at first almost every celiotomy was directed at the ovary, next the appendix was the point of attack, lastly the gallbladder has received particular surgical attention.

Fresh from the perusal of a series of abdominal operations, *e.g.*, on the gallbladder the surgeon goes to the bedside of an abdominal case with a mind unconsciously biased in the direction of the gallbladder as the offending organ producing the symptoms in question. Errors in diagnosis have, perhaps, occurred in this manner. Fortunately, such errors are frequently discovered and the true condition revealed and relieved before the abdomen is closed. Notwithstanding the many carefully reported cases of both appendicitis and obstruction of the cystic duct, the symptoms of these two affections are often conflicting and confusing, as shown by reports of three cases by Dr. G. P. Harris in the *Inter. Jour. of Surg.*, January, 1906, to quote:

"On July 26, 1897, Mrs. B., widow, aged 76 years, summoned me and stated that she had been taken on the previous day with an attack of indigestion and was confined to bed. She had vomited profusely and had marked tenderness in the epigastrium. I diagnosed the case

as gastroenteritis and gave the usual remedies. I did not see her on the next day, but was called again on the 28th and found her much worse, after a slight improvement lasting several hours. She was vomiting more frequently and had severe pain in the region of McBurney's point. The right rectus muscle was rigid and percussion wave dullness most marked over McBurney's point; abdomen distended; pulse 100, temperature 99.5°. She was removed to a hospital, and after consultation of several physicians a diagnosis of appendicitis was made.

"On opening the abdomen a normal appendix was found and removed, and on further exploration a smooth elongated body about 6 inches in length and $2\frac{1}{2}$ inches in breadth was found projecting into the upper angle of the wound, and was easily recognized as the gallbladder. The opening was enlarged and the gallbladder opened and emptied of bile. Two large stones were found in the common duct. This case gave no history of previous stomach affection and had no jaundice. Tenderness was most marked about one half inch above McBurney's point.

"The second case was that of Mrs. R., a strong, vigorous married woman, aged 42 years, mother of 12 children, had suffered with pain just above McBurney's point. This had grown worse and she had nausea and vomiting with considerable prostration. Right rectus rigid. After etherization the diagnosis of appendicitis was readily found to be wrong, as through the relaxed muscle the distended gallbladder could be easily made out.

"The third case was a woman, aged 43 years, married, mother of several children, she had been sick for twenty hours with symptoms of appendicitis, severe pain in the right side, nausea, vomiting and slight elevation of temperature. Abdomen distended, tympanitic and very sensitive on pressure just above McBurney's point. Right rectus rigid. The diagnosis was appendicitis or obstructed bile duct. On etherization the enlarged gallbladder was easily mapped out and appropriately treated."

These cases all recovered under appropriate surgical treatment. In reviewing the histories of the cases reported, three points worthy of note are to be observed:

1. That pain in each instance was slightly above McBurney's point.
2. That diagnosis of the actual condition was made in two instances when the abdominal walls were relaxed by anesthesia.
3. The rather remarkable fact that such a pathological condition of the biliary apparatus as was reported in each case could have been

produced without causing noticeable symptoms prior to the attack during which operation was performed.

A Case of Gangrenous Pancreatitis.

By M. GEORGE GORIN, M.D.,

St. Louis, Mo.

Inflammations of the pancreas have recently excited a great deal of surgical interest and many cases have been reported. The anatomical situation of the pancreas, the close relationship of the biliary apparatus and the varying symptoms occurring with affections of these organs render diagnosis a matter of extreme difficulty, as is also its relief by surgical measures. The occurrence of pancreatitis in connection with cholelithiasis, especially of the common duct, has been repeatedly observed, notably in the instructive case of Halstead, where, after unavailing operation on a collapsed patient a small calculus was found closing the papilla of the duodenum.

Dr. Vandervear reports in the *Medical Review of Reviews* a highly interesting case of "Gangrenous Pancreatitis Associated with Cholelithiasis: "

"The patient, housewife, aged 42 years, previous history negative, was seized on May 3d about 3 a.m. with nausea and vomiting accompanied by severe pain in the epigastrium. Her family physician found her at this time rolling and tossing with pain over the gallbladder and left hypochondrium. Temperature 98°, pulse 100. Severe nausea and vomiting which was aggravated by pressure or manipulation of the epigastrium. Thirst not manifest. On the next day the pain had abated greatly, but tenderness and nausea still continued. During the next two weeks she grew better, but an area of dulness developed just above the umbilicus and continued to increase until at the end of three weeks the entire epigastrium was dull and the patient showed fever charts resembling typhoid, though the bowel was rather constipated. On June 6th she was placed in a hospital under the care of Dr. Vandervear. A provisional diagnosis of typhoid with positive pancreatic affection was made. At this time she was semicomatose, temperature 102.8°, pulse 114. Blood count showed 5,888 white cells. Widal reaction negative. On June 19th a blood count of 18,000 to 23,000, with rising pulse, indicated laparotomy. An incision from the ensiform cartilage to the umbilicus revealed the stomach and colon adherent to the anterior abdominal wall with areas of fat necrosis

present at the site of the adhesions. The gallbladder was slightly distended and contained several calculi. On exploring the lesser cavity through an incision to the left it was found full of debris from the organs bounding the cavity. The tail and enlarged part of the pancreas had sloughed off and lay free in the lesser peritoneal cavity. Through and through drainage was employed and the patient rallied for three days but died after a period of unconsciousness of several hours. Autopsy revealed a collection of pus between the liver and diaphragm, about twenty biliary calculi, and the only portions of the pancreas remaining were two small masses—one 2 by 4 cm. in the duodenal curve, and a portion of the tail, 3 cm. in diameter, adherent to the spleen."

In reviewing this case the author quotes from Robson and Moynihan: "Fitz's rule is the best, *i. e.*, acute pancreatitis is to be suspected when a previously healthy person or sufferer from occasional attacks of indigestion is suddenly seized with severe pain in the epigastrium followed by vomiting and collapse, and in the course of twenty-four hours by a circumscribed epigastric swelling, tympanitic or resistant, with slight rise of temperature."

Considering the case presented, all these symptoms were present in the first few days of the, but gradually abated; that following the probable expulsion of a gallstone through the papilla of Vater this same condition was in all likelihood repeated two weeks following and again for the third week, but with slight abatement of temperature and pulse.

YESTERDAY AND TODAY.

DEPARTMENT EDITORS.

Dr. E. A. Babler, Surgery.

Dr. Adrian Bleyer, Medicine.

Treatment of Pneumonia.

For some years there has been an increasing tendency to cease promiscuous drugging in pneumonia. It is generally understood that the physiologic processes concerned in the cure of this dreadful disease are uninfluenced by any known medicine.

Let us notice a few data from the past:

Dr. David Scott (*Medical Recorder*, 1826) in a case of severe pneumonia, used the following treatment:

"First day.—The patient was bled 72 ounces.

"Second day.—Thirty-six ounces of blood were withdrawn. A blister to the chest was ordered. A purgative was prscribed.

"Third day.—Six cupfuls of blood drawn from opposite arm. Nauseating doses of tartar emetic were given every two hours."

Yet this patient recovered.

Twenty-five years ago the drastic treatment had somewhat abated, but drugs in large and frequent doses were generally given.

The following is from the tenth edition of Hooper's "Vade Mecum:"

"During the first stage, and in plethoric and vigorous subjects, and where the consolidation is extensive, leeches may be applied to the chest, followed by a linseed poultice and a brisk aperient. Half a grain of tartar emetic, with 2 grains of calomel, may be given every two or three hours, and mercurial ointment should meanwhile be rubbed into the armpits and groins until the gums are affected. In slighter cases, the application of a black blister over the dull portion of the chest-wall, and the continued use of hot linseed poultices. A grain of opium, with one or two grains of calomel, every four or six hours, and half an ounce of acetate or citrate of ammonia every three hours, is a more appropriate treatment."

The influence of this teaching still permeates some parts of the medical profession and is daily revealed in the traditions of the laity. The antipyretic treatment followed, as a matter of course, when antipyresis in typhoid received such careful consideration. Germain See (1885) with a tremendous force overthrew these old practices, but he was instrumental in establishing others:

"Clinical experience delivered from every theoretical prepossession, and judging the question without party bias, has for more than a quarter of a century shown that there is no curative treatment for pneumonia; henceforth and forever the line of inquiry should be in the direction of medicaments which shall attenuate the action of parasites in the organism, while at the same time maintaining the vital forces so as to enable them to successfully to struggle against the invading and destructive action of the micro-organisms."

This is true today, only that we have been searching for twenty years for the medicament which shall inhibit the bacteria causing the disease, and this chemical is yet to be found. Still we have learned something of sustaining the vital forces.

Loomis (*Medical Record*) in a recent symposium emphasizes the following points:

"1. A plea for the more general use of morphin hypodermatically in the early stage of invasion of pneumonia, a stage which in very many cases was accompanied by not only the shock to the nervous system from a sudden and overwhelming toxemia, but by distressing pain, often amounting to the agony of a pleurisy.

"2. If any criticism could be offered of our treatment of pneumonia during the past few years, it was along the line of the injudicious and often unwarranted use of alcohol.

"3. The last, and possibly the most important point was that more patients were damaged than helped by the promiscuous drugging which was still too prevalent."

Treatment of Burns.

Without question, one of the most distressing accidents to which mortal man is subject is a severe burn of large area. Experience has taught that when a patient presents a burn involving one-third or more of the body surface it is more than probable that he will succumb. Death is usually due to: 1, Shock; 2, subsequent toxemia; 3, loss of function of the destroyed integument, or, 4, to exhaustion.

Very recently, Mummery, Crile and others have found that mental and physical irritants may produce vasomotor paresis which results in the accumulation of the blood in the splanchnic vein—in other words, "the patient is bled into his own belly." Kinneman has shown that simply lowering of the body temperature may cause death. It has been proven that the "gilded boy" died as a result of lowering of the body temperature. Loss of large areas of skin surface causes a lowering of the body temperature. Sneve feels confident that the fall in the body temperature is the most dangerous condition in shock. It must be admitted that death from toxemias is frequently due to our treatment.

We have long been taught that air should be excluded from all burns, hence we have applied various preparations. The ancient treatment of burns is too well known to need but mention. Our forefathers administered strychnin and various stimulants in trying to relieve the shock; large doses of morphin soothed the sufferer, while car

ron oil, antiseptic dressings, salves, powders, lotions and what-not were employed to exclude the air. Surely, the agony suffered by these unfortunate mortals must have convinced many practitioners that the treatment was almost barbarous. The results were, of course, very unsatisfactory and the treatment unduly prolonged.

About twenty years ago Copeland, of Albany, became disgusted with the occlusive treatment; he removed the dressing which he had been applying and simply left the injured tissues exposed to the air; he kept the discharges carefully sponged and the patients made very rapid and satisfactory recoveries.

At the present time the treatment of burns is being completely transformed. Mummery has recently stated that stimulants, such as strychnin, whisky, ammonia, etc., are absolutely contraindicated in the treatment of shock. Stimulants simply add insult to injury. Adrenalin cautiously administered, ergot, saline enemata, massage, application of external heat, a snug binder applied to the abdomen are being employed. A full hot bath has been found of benefit in controlling the shock. Subsequent toxemia is prevented and the pain is relieved by simply exposing the part to the air as advised by Copeland. The patient is placed in a room sufficiently warm to be of comfort to the sufferer. During the first few days sedatives are given to relieve the severe pain.

In burns of the second degree stearate of zinc is dusted over the parts, all blebs are opened, the exudates being very carefully removed. The patient is given a daily bath which later is followed by massage. Surgical cleanliness is desired. Antiseptics are not indicated. By the open method the pain soon subsides, the parts heal rapidly, the removal of painful dressings is obviated, the patient soon regains his health, the functions of the remaining skin is maintained, distressing cicatrices do not follow, joint impairment is the exception, skin grafting can be resorted to early, and the final results are far superior to those obtained by previous methods. The experiences of Sneve, Brüning, Barnard, O'Brien and others corroborate these assertions.

Varicocele.

In ancient times the affection which is at present described under the term "varicocele" was given passing notice under the caption "cirsocele." In discussing the subject Samuel Cooper said:

"Varicocele implies nothing more than a preternatural dilatation of the bloodvessels of the scrotum. These, like the vessels in other parts, are liable to become varicose; but they are seldom so much enlarged as to be troublesome, unless such enlargement is the consequence of a disease either of the testicle, or of the spermatic cord. In this circumstance the original claims our attention, and not this simple effect of it; and, therefore, as Mr. Pott observes, the varicocele, considered abstractedly, is a disease of no importance."

In fact, these early writers did not present any definite treatment for varicocele. Concerning cirsocele, Richter said:

"Cirsocele is a varicose distention and enlargement of the spermatic veins combined, in some instances, with a similar affection of the lower portion of the vas deferens, the convoluted canal of the epididymis and even of the tubuli seminiferi testis, which becoming displaced from within the tunica albuginea, leave it behind like an empty cyst, and being blended with the vessels of the epididymis, compose the unnatural misshapen mass perceptible in the scrotum. A thickening of the cellular texture of the spermatic cord has some share in the disease."

Today the mere word "varicocele" causes us to immediately think of a "bag of worms." The abnormal dilatation or elongation of the veins of the spermatic cord is due either to increased blood-pressure or to a weakening of the walls of the veins. The fact that 86.5 per cent of the cases exist on the left side alone is explained by the termination of the left spermatic vein in the renal vein at a right angle, by which the flow of its blood is somewhat interfered with. The blood-pressure in the left inguinal vein is distinctly higher than that in the vena cava. Other anatomical peculiarities are too well-known to necessitate mention.

Previous to the introduction of antiseptic and aseptic measures the treatment of varicocele was by no means ideal. Various methods of subcutaneous ligature or division employed. M. Vidal (de Cassio) presented the following:

"An incision of a line or two in length, having been made in the scrotum, so as to include a fold of skin, a small silver thread is passed behind the veins of the cord and a second thread of the same metal, through the same aperture, anteriorly to the vein. The extremities of the two threads are then united and twisted, on each side, until the space which separates the veins is so reduced as to strangulate them.

The twisted metallic threads which thus embrace the spermatic veins, is then turned a certain number of times, so as to roll the veins on its axis. When the rolling of the veins appears to have been carried to a sufficient degree, the two free extremities of the metallic ligature are brought forward, crossed, and twisted on a small roller bandage. A metallic sound, or a piece of stick, being placed in the angle formed by the union of the twisted extremities constitutes a kind of tourniquet, by means of which pressure is applied to the veins, and daily increased, until they, and the parts comprised between the threads and the bandage, are entirely divided; this generally takes place in from ten to fifteen or twenty days, and the cure is completed in the space of one to two months."

That castration was sometimes performed in these cases is evidenced by the words of Cooper:

"One can hardly suppose a case (of cirsocele) so severe, and in capable of palliative treatment, as to require the performance of castration, though such instances are mentioned by very good authors."

The present-day treatment of varicocele is well-described by Treves, who says:

"The only safe and satisfactory operation consists in exposing the anterior bundle of veins by a short incision through the coverings of the cord, isolating the veins from the vas deferens, etc., applying a double ligature, excising the bundle for a distance of one or two inches, and securing the two severed ends together. The tendency of late years is to place the incision higher up than formerly. If the relaxed scrotum requires to be dealt with, it is best to make the two wounds quite independent."

The Treatment of Diphtheria.

It is quite probable that this disease has existed every since the birth of man. The Greeks felt confident that it had been communicated to their country from Egypt. Aretaeus wrote about the disease. It is true that for many ages the affection was described as acute croup. Good and others credit Home of Scotland as having been the first to call attention of the profession to the disease. Concerning the disease Good says:

"In most parts of the American States it is called *hives*, supposed

by Dr Hasack to be a corruption of the term *heaves*, and probably so named from the heaving or violent efforts of the muscles of the chest and abdomen which take place in breathing during the course of the disease."

In discussing the treatment of the disease, Good says:

"The cure demands prompt and active attention; and must depend not so much upon searching into and correcting the remote causes, or even counteracting the spasm, as in counteracting and removing the membranous secretion, which is every moment in danger of producing suffocation; and especially in children, in whom the natural aperture of the glottis is much smaller in proportion than in adolescents; copious bleeding at the onset has been recommended by M. Felix. Emetics have been tried with doubtful success. Calomel in large doses (frequently repeated) has been advocated. Tracheotomy should be a last resort"

In 1883, Klebs discovered the micro-organism responsible for the disease. The subsequent researches of Loeffler corroborated and advanced the findings of Klebs. Gradually the profession became cognizant of the fact that the so called "acute croup" was in reality diphtheria. The introduction of intubation by the lamented O'Dwyer—a name which will ever be remembered and ever embellish the annals of history—produced marvelous results. It remained, however, for the illustrious Von Behring to present the specific remedy—the serum which saves annually many thousands of human lives.

The present-day treatment of diphtheria is ideal. That the results are not always perfect, is not due to the shortcomings of the remedy, but to the failure of the medical attendant to apply the specific in sufficient quantity and sufficiently early to prevent an unfavorable issue. Antitoxin (3000 units) should be given the moment the practitioner becomes suspicious that the patient "may" have diphtheria; this dose should be repeated every six hours until benefit has been noted. *The danger lies in giving it too late and in too small quantities.* The heart must be protected. Very recently, Saunders has called attention to the fact that we should intubate in all cases where there is difficulty in breathing. This is undoubtedly true. Saunders says:

"Before the introduction of antitoxin the medical attendant would summon the assistance of his skilled colleague just as soon as he felt suspicious that his little patient was suffering with laryngeal diphtheria.

The marvelous achievements secured by the administration of antitoxin has almost completely transformed matters. Physicians now depend almost entirely upon antitoxin. The present mortality rate is kept unnecessarily high because of the growing tendency of the physician to postpone interference for the relief of stenosis of the respiratory tract occurring in the course of the disease."

SOCIETY PROCEEDINGS.

THE BETHESDA PEDIATRIC SOCIETY.

Meeting of January 26, 1906.

Dr. JOHN ZAHORSKY read a paper (see page 286, this issue) on the
Acute Infections of the Urinary Tract in Infants.

Dr. LOUIS M. WARFIELD said that this question of acute infections of the genitourinary tract in babies, could not be brought to the attention of the Society too frequently. In a recent case that he had seen through the courtesy of Dr. B. W. Moore, in a girl infant of nine months, with high fever and much pus in the urine, a pure culture of bacillus coli communis was grown from a catheterized specimen. This organism is the one most frequently found, although staphylococci have been found, and Abt of Chicago, in a case following a severe gastrointestinal infection had cultivated from the urine of a typical case of pyelitis, a bacillus which was much like the Shiga bacillus. The case cited above had died, but unfortunately autopsy was refused. In such fatal cases, the suggestion of Rotch, that the tubercle bacillus might be the infecting organism should not be kept out of mind. Search was not made for the bacillus in this case.

The infection was more apt to be through the blood than through the bladder, although such cases as three of those reported this evening by Dr. Zahorsky might have been simple cystitis due to infection through the short female urethra. It is known that the kidneys of infants dying from gastroenteritis show various grades of nephritis. The infection must come from the intestine. Pyelitis and enteritis are so frequently associated together there must be some connection between the two.

The presence of pear shaped and tailed cells in the sediment of urine, does not enable one to differentiate between cystitis and pyelitis.

The importance of examining babies' urine in cases with high irregular fever could not be too strongly emphasized. It was not difficult to obtain specimens of urine from babies. Girl babies could be catheterized. A very simple method of obtaining urine from boy babies was to use a revolving ink-well, the smallest size. This has a wide mouth, a neck placed at right angle to the body which is deep and so made that fluid does not readily spill out through the constricted portion of the neck where it joins the body. By fastening such a vessel upside down in the napkin so that the penis is in the bell shaped neck of the vessel, the movements of the baby will not dislodge the vessel and once the urine is in the vessel there is small chance of its being spilled.

Dr. FISCH expressed the opinion that we could not make the diagnosis by finding pear-shaped cells; the quantity of albumin is more important. One-half per cent albumin (Esbach) suggests pyelitis. Coli infections are doubtful; ascending infections are rare in adults, and must be more so in infants.

Large granular casts reflect kidney infection. and plus pus makes the differential diagnosis of pyelitis easy.

Dr. LIPPE called attention to stone, as an etiologic factor. Uric acid infarcts are common in infancy. Given an infection of the bowel plus an injury by the presence of calculi, even if small, it is not difficult to account for the so-called coli infections, both of the bladder and kidney. Albumin and casts in early infancy are quite common.

Dr. TUTTLE reported two cases; the first followed a circumcision, streptococci were found; in the second case which also followed a circumcision, large uric acid crystals were found. This case developed pneumonia and for the time, the urinary trouble was forgotten. The pneumonia got well and a recurrence of the urinary symptoms occurred.

Dr. ZAHORSKY, in closing, said that a large quantity of albumin during the first days, diminishing rapidly, speaks for cystitis. Specific gravity is usually low in infancy and is not of any help. Can get urine usually, by getting child up out of sleep and holding it over a vessel. The urine should be examined in every acute fever in which a diagnosis is in doubt.

Dr. ZAHORSKY recited some recent experience in a medico-legal case in which he was asked to testify as a expert in pediatrics. Several important questions were put to him in regard to the growth and physical condition of the infant. One was, how accurately the age of an infant could be determined by physical examination, without knowing the history of the infant. His reply was that during the first two weeks, the signs depended on were, the condition of the cord and the "flush" of the newly born. As to the former, he stated that it sloughs off any time between the third and fifteenth day, hence, it would be pardonable to make an error of from three to five days in the age. The rubor neonatorum disappears any time between ten days and three weeks, certain irritants (as soap) may cause it to persist even longer, hence, it is a very unreliable sign. The condition of the navel itself after the cord drops off, varies so much that an error of two or three weeks might easily be made.

After the first month, if nothing is known of the nutritive history of the infant, errors of two to three months, or even more must be allowed. The fontanelle is usually about the same size at six months as at birth. The closure of sutures occurs from six weeks to four months, usually two months.

The length of the baby, the condition of the cranial bones fontanelles and sutures vary so much according to the rapidity of growth, that the nutritive history being unknown, the estimation of the infant's age is very uncertain under one year of age.

Pyonephrosis.

In the case reported by C. H. Stackhouse, Wilkesbarre, Penn. (*Jour. A. M. A.*, April 21), the condition became so serious that the kidney was opened and anchored to the abdominal wall. A little later, the obstruction continuing, filiform bougies were passed down through the ureters and drainage established through the bladder. Obstruction appeared twice later, but was spontaneously relieved and the wound finally closed permanently. No conclusion was reached as to the cause of the condition; it may have been a congenital hydronephrosis, a twisting of the ureter or a pyelitis. The treatment after the operation was largely symptomatic.

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EDITORIAL COMMENT.

Compare the Action of Drugs.

One singular deficiency is noticeable in all therapeutic tests in regard to the newer synthetic and pharmaceutical preparations, and that is that the new preparation is not scientifically compared with other drugs having a similar action but manufactured by a different firm. This is one of the unfortunate results of commercialism influencing therapeutic progress.

The firm A, manufactures a very valuable antipyretic and extols it above all others; similarly, the firm B, knows how to use printers' ink in favor of their product. Now, which of the two is really the best? Who can tell whether Peptomangan or Ovoferrin is the preferable iron compound to use? Shall we rather use chloretone or somnose when we need a hypnotic, or shall we prefer veronal or trional. Is aspirin superior or safer than antipyrin?

None of these questions have been answered.

Then, again, too little attention is paid to the older remedies and their comparison with the new. It is not sufficient to determine that a certain preparation has a certain therapeutic value in certain diseased conditions, it must also be shown that the new drug is an advance over the other.

We should very much like to see a very strenuous competition among pharmaceutical chemists in the way of making accurate phar-

macologic investigations of their own and similar medicinal products.

Encourage the Careful Manufacturer.

We must encourage the honest manufacturer to toil in the domain of therapeutics. A new combination or a new synthesis that is really an advance over past methods should be applauded. Most of the modern progress in this field is due to the manufacturer. Let us not stand in his way. But let us denounce the hungry imitators and lying quacks who attempt to foist inferior, secret or worthless preparations on us. If he has a new remedial agent let it be exactly what he states, nothing more or less. If a manufacturing chemist has once been caught in a falsehood, he is unworthy to manufacture any medicine for physicians. Shun him and his products.

The Man With the Muck-Rake.

"The men with muck-rakes are often indispensable to the well-being of society, but only if they know when to stop raking the muck," said President Roosevelt, and the remarks are applicable, likewise, to the department of medicine and pharmacy. Let us cleanse and fumigate our domestic quarters, let us remove the filth, but let us not rake all our latest improved implements along with the muck.

The muck raker must occasionally clear our apartments of accumulated filth—some of it has been left there by misguided physicians, some by commercial scoundrels, some by ignorant dreamers. We should demand, however, that the muck-raker have good eyesight and an unbiased judgment. The broad principle, for the patient's good, must be his entire rule, but the weaknesses of humanity must be reckoned with. At all times it is well to search for some lost gem even among the muck.

The Beneficence of Disease.

Sir Frederick Treves has quieted many pessimistic inquirers by announcing that, "if it were not for disease the whole human race would soon be extinct." As it is disease that kills and disease that keeps alive, the paradox is not obvious at the first glance. What he

wished to state was that the peculiar phenomena which we know as disease processes have for their object the preservation of life.

The observation is old but not wholly true, else the violent convulsions of the patient suffering from meningitis or puerperal eclampsia must be regarded as beneficent. That state of the human body in which no local or general reaction is brought about by the presence of an infection is ideal. While certain processes in disease are undoubtedly beneficent, there are others which are detrimental. Surely no one could believe that laryngeal stenosis in true croup, hyperpyrexia in pneumonia, intestinal hemorrhage in typhoid fever, and vomiting in pregnancy are especially beneficent.

So, while some of the processes of disease are aimed, not at the destruction of life, but at saving it, there are others which aim directly at the destruction of life. The clinical difficulty is to distinguish these two sets of symptoms. When this can be accurately done, rational therapy will stand in an impregnable position.

The Bacteriology of Cows' Milk.

The time has arrived when each physician must give daily directions not only for the care and preservation of cows' milk, but also in definite terms speak something of the care necessary to prevent the contamination of milk during milking. Milk must be obtained relatively aseptic if we wish to prevent summer diarrhea.

While, on the one hand, we are in possession of a technic which furnishes clean milk, on the other, bacteriologists are still disputing concerning the bacteriology of this important article of food. What are the real acid producers of milk? Hueppe found the *bacillus acidilactici* as the principal acid-producing germ and for many years it was given this place. Now, Heineman declares that this micro-organism is a myth. The *bacillus lactis aerogenes* is given this function by several recent writers.

To the streptococcus has been assigned a conspicuous part in the disease-producing qualities of infected milk. Now, we have a streptococcus lacticus which is said to be a harmless acid producing saprophyte. According to Heineman the *bacillus lactis aerogenes* is found in the beginning stages of souring, while the streptococcus develops in the later stages.

This bacteriological uncertainty should not deter us from attempting to exclude all possible micro organisms from milk—harmless forms as well as the toxic varieties.

Local Anesthesia.

Since the dangers of general anesthesia remain about the same, although much depends on the skill of the one giving the anesthetic, it behooves surgeons, therefore, to become masters of the technic to produce local anesthesia. Wyeth finds the infiltration of the tissues with water very satisfactory. Witherspoon recently reported a long series of cases operated upon by local anesthesia, emphasizing its wide application. Braun continues to search for new nontoxic drugs to replace cocaine. Eucain has been used extensively. Stovain reaped quite a reputation in France. Alypin gives good results. Now Braun uses novocain fortified by adrenalin. Schleich's original formula has been changed very much.

With all these improvements the surgeon who insists on employing general anesthesia in minor operations is bound to be censured. Every surgeon must either himself become skilled in the technic of local anesthesia or employ one who is skilled. The indiscriminate administration of chloroform is not good surgery.

The Pharmacopeia.

The *Medical Record*, March 10, 1906, expresses a truism in stating that it is foolish to "attempt to coerce practitioners of medicine to a strict adherence to the drugs official in the Pharmacopeia." For physicians are usually far ahead of our official guide. In fact, the Pharmacopeia has the disagreeable habit of trailing behind the profession. When practitioners generally use a certain drug it is made official. After all, this can not be changed; it is dangerous to put an article on the official list until it has generally been found valuable. Hence, it is foolish to insist that the physician should prescribe only official drugs. In fact, many successful physicians are always searching for something new and are anxious to use the newer preparations.

Thus adrenalin (adrenalin, suprarenin, etc.) the solution of the active principle of the suprarenal gland is universally used. Who

would prescribe the *glandulæ suprarenalis siccæ* which was recently made efficial? Is it not up-to-date to prescribe the recent glycerophosphates, iron peptonates, iron vitellin, tannin albuminate, silver albuminate, silver vitellin, etc., and though we can replace all these preparations by official drugs, how many practitioners will do this? The successful practitioner must use up to date drugs, otherwise he is sure to fall behind.

This anxiety to improve our armamentarium of drugs constantly should not carry us away, so that we discard a valuable old drug for something new, that is secret and inferior in value. The *Pharmacopeia* should be the physician's guide in a great measure, but we feel sorry for the practitioner whose therapeutic means are limited to it. He will usually be five years behind the times. No amount of censure on the part of certain leaders in medicine can change this tendency.

Pharmacists and Physicians.

The relation of the pharmacist and physician should be most cordial. Among the well-trained pharmacists the position taken by physicians in regard to nostrums is fully appreciated and heartily indorsed. Of course, there are numerous druggists to whom few physicians would send a prescription, whose income is greatly increased by pushing the sale of patent medicines (alcohol, opium and cocain) who are indignant because the modern physician insists that he should know the composition of the remedial preparation which he prescribes, or urges legislation to coerce the nostrum manufacturer to print the contents of the bottle on the wrapper.

The coarse and ungentle language used by the *National Druggist* in denouncing these efforts on the part of the medical profession is unworthy of that journal. The signs of the times are for the square deal and necessitates an open dealing. Every physician who writes a prescription records the means adapted to alleviate a disease and the record is open for inspection to anyone vitally interested. Why should we expect less of the manufacturer? Let every bottle be accompanied by a prescription, giving an accurate formula of its composition. This is right and is bound to come sooner or later.

LEADING ARTICLES.

The Selection of Remedies for Neuralgias.

In the following pages the term neuralgia is employed in the widest clinical sense, and embraces a number of distinct pathologic conditions. It is, however, for the relief of pain of a neuralgic character that the patient applies to the physician, and for the purpose of applying therapeutics clinically it is convenient to consider the subject of treatment from this viewpoint.

According to Anstie, a true neuralgia is characterized by the paroxysmal attack, recurring in the same nerve and gradually extending to its neighboring or allied nerves, the development in time of Valleix's tender spots where the affected nerve passes through a bony or fibrous foramen, the presence of depression as a cause of the attack or an element of it, anesthetic patches of cutaneous nerve distribution, trophic changes following the repeated hyperemias due to the paroxysms, etc. The influence of autotoxemia in inducing attacks, and the presence during them of intense cutaneous vasomotor spasm, are developments subsequent to Anstie. We here present simply some points as to the selection of drug remedies, with their indications, not that one tenth of these is required in any one case but to teach the wealth of remedy that may be exactly applied to meet a definite condition, autotoxemia and its treatment underlying the whole.

Acetanilid is useful to quell attacks occurring in robust individuals, which are severe, either with or without fever, but is dangerous in the neuralgias of the weak and debilitated from any cause, and should never be long continued or given to the laity indiscriminately. When used, give 2 to 5 grains, guarded with caffeine and accompanied by soda, two to four doses one hour apart; if relief has not then been attained, other remedies are preferable. This is one of the legitimate uses of this much-abused drug.

Antipyrin succeeds best in the pains of ataxia and is somewhat less depressing than acetanilid—and less effective.

Atropin is a powerful remedy for sciatica, lumbar neuralgia, uterine, spinal irritation, dysmenorrhea, ovarian and intercostal forms; also for tic douloureux. When the patient's skin is shrunken and cold, the

pulse suppressed and tense, atropin will return the blood to the skin and relieve the internal hyperemia. Give to an adult $1/500$ grain in hot water every fifteen to thirty minutes until the skin reddens slightly and the mouth is dry; if relief has not then been secured, this is not the remedy required—but there are few cases that will resist this kind of spasmodic pain. A dose of $1/100$ grain injected close to the affected nerve will frequently conquer the most stubborn attack. It will, however, not remove hyperplastic tissues compressing a nerve trunk.

Aconitin (often with veratrin in equal dosage) is indicated in neuralgias attended by a hard, wiry pulse, throbbing headache, evident displacement of blood—suspending circulatory equilibrium, forms of neuralgia usually due to catching cold or the checking of discharges. Of amorphous aconitin, give $1/134$ grain in hot water every five or twenty minutes until there is enough effect on the pulse to show full physiologic action, then less frequently. With quinin arsenate or, better, the hydroferrocyanid, in tonic dosage, aconitin is useful in periodic attacks.

Bebeerin, from the *nectrandra* and *pareira brava* (do not confound with berberin from *hydrastis*), has been recommended as a remedy for periodic cases, but this alkaloid, having unfortunately acquired repute as a substitute for quinin, we have never investigated it with a view to establishing the differences in their therapeutic powers. Bebeerin, however, is more astringent to relaxed connective tissues than is quinin, standing between the latter and berberin. This would indicate its value in relaxed conditions and during convalescence. The tonic dose is about a grain before meals.

Brucin has been advised in hysteric cases, in intercostal neuralgias, and for nervous erethism. This alkaloid possesses marked local anesthetic powers and is usefully combined with cocain when the latter does not work well. Otherwise brucin resembles strychnin, though milder in action. The dose is about $1/67$ grain every five to fifteen minutes until evidences of tonic action are manifest. Locally, a 2.5 per cent solution may be employed with equal parts of a similar cocain solution.

Caffein has also been injected along the course of the painful nerve with asserted local anesthetic action, but does not equal brucin. Caffein is useful internally for sciatica and other deep-seated neuralgias, and for affections of the brachial and cervical plexuses when in-

jected. The dose for hypodermatic administration is from 1 to 5 grains, made soluble by the addition of sodium salicylate. Both must be chemically pure—the salicylate, if contaminated, will make the solution pink or even black. The solution may be made by dissolving 35 grains of sodium salicylate and 40 grains of caffeine in distilled water to make 2 drams. This gives 1 grain of caffeine to 3 minims. Care must be taken to instantly wash out the needle of the syringe after injecting, as this solution quickly clogs the small aperture. For internal use, caffeine valerianate may be given in doses of $\frac{1}{6}$ to 1 grain every few minutes. Other salts do well in hot water—same doses.

Cannabis is useful for neuralgic headaches and in visceral forms. The dose of a good extract is $\frac{1}{6}$ grain every half to one hour until effect, or until disturbance of the sense of time or space indicates toxic action. The want of a reliable and uniform preparation of this curious drug has hindered its use. Its true remedial principle has not, as yet, been isolated.

Capsicin is useful in cases developing after the patient has ceased the habitual use of alcohol or morphin; and when the vital depression extends to the stomach and absorption is stopped. A small dose— $\frac{1}{67}$ to $\frac{1}{15}$ grain, may be added to other remedies given by the mouth.

Arsenic is effective as a means of breaking up neuralgic sequences, malarial and otherwise; for angina pectoris, and in the neuralgias of frigid, anemic, amenorrhœic women. Small doses should be given, of the preparation selected, and continued for several weeks. In angina pectoris the writer prefers arsenic iodid, $\frac{1}{67}$ grain four times a day, continued for a year if necessary.

Cocain gives relief in cases due to overwork, mental strain, anxiety, apprehension, grief or other overmastering emotion, and in those stopping narcotic habits. It is a dangerous remedy, especially to the neurotic, and the patient should never be permitted to know that he is taking this drug. Disguise it effectually, and in most cases replace it promptly with caffeine or brucin. The dose is $\frac{1}{6}$ grain by the stomach, repeated hourly to effect for the paroxysms.

Colchicin has a wider field than is generally believed. It is the remedy for the plethoric and the uricacidemic, for attacks following indulgence at the table (post-Thanksgiving headaches), or from catching cold, and whenever there is marked throbbing of the head. The

acme of a migraine usually presents this indication. The dose is $1/134$ to $1/30$ grain in hot water to hasten its phenomenally slow action, and repeated in two hours if necessary. This drug is best given in a single full dose when we have learned the patient's reaction toward it.

The phosphate of copper is said to possess a specific power in relieving pain in the fifth nerve. This has also been claimed for aconitin and for gelseminin. The differentiation has not been cleared up and seems doubtful. Luton suggested this salt as a remedy for tuberculosis, and it may prove specifically valuable in the neuralgias of these cases. The dose is $1/6$ grain every two hours for nine doses a day.

Croton chloral relieves pain in the scalp; it has given me the most satisfaction in relieving the tenderness ("hair pulling") remaining after the subsidence of a neuralgia of this region. The dose is 1 grain every hour until relieved.

Cypripedin and scutellarin are mild but efficient nervous sedatives or rather calmants. They are useful for the depression attending these attacks; attempts at differentiation has been made by assigning scutellarin to cases where the pupils are dilated and cypripedin to those showing contraction. The dose of either is from $1/6$ to 1 grain, in hot water, every hour.

There is no place in the treatment of neuralgia, a malady of depression, for any of the bromids unless it be camphor monobromid. This may be employed in doses of 1 grain every half hour during the early evening to secure sleep in prolonged attacks or after their subsidence.

Delphinin has been advised in obstinate facial and cervical forms. It combats the vasomotor spasm and any irritation or excitement in the genital sphere, and may be employed in such cases. The dose is $1/67$ grain hourly.

Digitalin can only be considered an accessory but has been advised in sciatica and in aural cases. It is often indicated. Its administration should be regulated by the tension of the pulse.

Ergotin proved useful in one case of obstinate gastralgia with pulsation of the abdominal aorta. It was given hypodermatically in 3-grain doses three times a week. The application of this remedy might be amplified. Basis of indication, physiologic action.

Eserin has been applied with good effect for neuralgias of the eyeball; the ordinary solutions of the oculist being used.

Gelseminin subdues sexual irritability and is applicable to neuralgias of this tract. It has been advised for dental pains also, with less evidence in its favor. Ovarian and testicular pains are quite certainly controlled by this agent in moderate doses— $1/250$ grain every half hour in hot water or hypodermatically, until relief follows or the droop of the eyelids signifies that the limit of its useful administration has been reached. If relief has not then been secured, the condition-diagnosis has been erroneous.

Iodin may be employed for a syphilitic taint, or to stimulate the absorption of encumbering débris along the course of the affected nerve. The latter indication is apt to present itself in an inveterate neuralgia whether the painful points of Valleix are demonstrable or not. Massage is a useful adjuvant when exudative masses are found along such nerves as the sciatic. The following is the most powerful absorption stimulant combination the writer has ever employed: Arsenic iodid, $1/67$ grain; mercury biniodid, $3/67$ grain; iodoform, $1/2$ grain; phytolaccin, 1 grain. This dose may be taken before each meal and at bedtime, for weeks if irritation of the eyelids does not give the signal for its decrease. In the iodids of mercury and arsenic we have our most powerful absorbents; the arsenic acts as a safety valve, directing the irritation to the eyes so that the first sign of overdosage will be there manifested; iodoform enhances the iodine effect and prevents gastric irritation, while phytolaccin, by stimulating the lymphatic glands, relieves the other absorbents of that duty and leaves them to exert their whole force on the disintegration of encumbering débris, which should always be promptly disposed of by saline elimination.

Glonoin is the most active agent we possess to dilate the arteries, and acts even more quickly when dissolved in the mouth than it does when given hypodermatically. It is indicated when the cutaneous vessels are spastically contracted. Atropin should be added to prolong the effect. Whenever any remedy is administered whose action it is desirable to accelerate, the addition of glonoin, by opening the vessels, secures this object. The ordinary doses are too large—glonoin, $1/250$ grain, when of good quality will sometimes cause unpleasant cerebral fullness, and half this dose repeated every five minutes is preferable.

Macroton is available for ovarian and uterine pains, for spinal irritation and, possibly, for fifth nerve neuralgias. The dose is from $\frac{1}{2}$ to 1 grain, in hot water, every half hour until relief or nausea occurs.

The injection of solutions of osmic acid along the course of an affected nerve has been employed instead of excision—the acid destroying the tissues. This procedure we do not recommend. We are not believers in the destruction of diseased tissue, preferring to cure it, and when such a measure is unavoidable prefer clean surgery to the application of an agency less readily limited to desirable effect. The 1 per cent solution in distilled water is employed, of which a few drops may be injected.

Phosphorus is probably best represented by zinc phosphid. This is an effective remedy for degenerated nerve tissue, and as Anstie claimed, true neuralgias (most are symptomatic) probably depend on degeneration of the posterior roots of the affected nerves. The writer commenced to employ this agent in the painful neuralgia attending herpes zoster, obtaining immediate and permanent relief from it. Since then it has been employed whenever this degeneration has been diagnosed, with similar good results.

There is another indication for zinc phosphid, in breaking up severe and obstinate attacks. If the therapeutics of neuralgia is timid and tentative, habituation to the drug will ensue and relief be imperfect; whereas, if the remedies are powerful and thrown in vigorously in maximal doses, the effect will be decided and cure will result. Quinin, 2 grains; zinc phosphid, $\frac{1}{6}$ grain; strychnin arsenate, $\frac{1}{30}$ grain; extract cannabis, $\frac{1}{2}$ grain, given together and repeated every four hours, is a model formula for this indication. The full adult dose of zinc phosphid is $\frac{1}{6}$ grain four times a day, for one week out of each month. It is unsuitable for cases due to cold or to inflammation, or for plethoric persons.

Quinin is employed to forestall attacks of periodic neuralgia and for supraorbitals. A full dose—15 grains of the bisulphate, may be given six hours before the expected attack; or the arsenate or hydroferrocyanate in small doses every waking hour. The small doses of the latter salts usually produce best results.

No one quite appreciates the value of salicylic acid until he administers in doses of $\frac{1}{6}$ grain every half hour. The constant instil-

lation of this minute dose prevents the growth of micro-organisms and ferments in the stomach far better than bulky doses given at long intervals. Cases dependent on such fermentation, on uric acid, rheumatism, etc., and "tic" when attended with acidity, are amenable to this agent.

Solanin is a drug with a future. It lessens the irritability of the sensory nerve-ends, gives tone to the capillary walls, and relieves hyperemia of the nerve centers. In sciatica, gastralgia and other neuralgias it has replaced morphin with advantage, proving effective without the disastrous possibilities following the use of opiates for recurrent pain. The dose of solanin is $1/12$ grain for an adult, every hour, until irritation of the fauces (dryness) denotes the limit of its therapeutic benefits. It is one of our best sedatives in epilepsy and kindred spasmodic affections.

Strychnin ranks deservedly as the best, all round remedy for neuralgia, both for breaking a paroxysm and for the intervals. It is especially useful in the visceral form, for those dependent on sexual and other excesses, and wherever there is relaxation of tissue or languor of function in evidence. The various salts of strychnin are to be applied as indicated: The arsenate for most cases and the hypophosphate when developmental nutrition in the young is obviously at fault. The nitrate for alcoholics and when renal elimination of solids falls below the normal, for steady effect and when nervous equilibrium is lost. The dose should be arranged with scrupulous care. Many persons can bear no more than $1/67$ grain every two to four hours. Some have taken with advantage 1 grain within twenty-four hours. The dose must be gauged strictly by effects, the pulse-tension being, perhaps, the readiest indication. Strychnin can be taken with advantage for a month, rarely longer.

When the pulse is hard and wiry, the patient plethoric, the heart hypertrophied and the renal and other eliminations markedly defective so that convulsions impend, the remedy is veratrin. This agent relaxes the vascular tension with certainty and its effect may be prolonged to any desired period, by careful dosage, to effect. Muscular pains and soreness subside under veratrin. It acts on all the organs of elimination—kidneys, skin and liver, and as toxemia is present in very many cases of neuralgia, the indications for this agent occur far more frequently than is suspected by most physicians. Veratrin

should be given at once, in doses of $1/134$ grain, freely diluted, every half hour until softening of arterial tension denotes its full useful effect. If acute or subacute catarrh is present, or if the patient is susceptible to the local irritation of veratrin, there will be manifested a sense of heat defining the limits of the stomach, which contraindicates further use of the remedy by this route. The combination of atropin with veratrin has not been tried so far as we know but should prove effective when cutaneous vasomotor spasm is marked and elimination deficient.

The foregoing account will show that the physician who gets in the habit of using single remedies, whose effects are uniform and definite, soon learns to recognize the fact that, in each case, one of these remedies may be exactly indicated while others are only approximations. When one learns to appreciate the precision needed in adapting remedies to conditions, the science of medicine becomes pleasant practice to a degree never previously experienced. And when the profession comes to appreciate what autointoxication really means, what it does to the sufferer, and the power of veratrin, the salines, the sulphocarbolates and the reconstructives, with change of habit, over its wonderful stride will be made in the prevention and cure of diseases of the most serious type—notably of Bright's disease, tuberculosis and, perhaps, cancer—by prevention.

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The Significance of Vomiting.

Vomiting may be either physiological or pathological—usually it is the latter. In the act of vomiting, there is fixation of the diaphragm, contraction of the abdominal muscles and walls of the stomach, relaxation of the pharynx, esophagus and cardiac orifice of the stomach and closure of the pylorus. Failure in any of these particulars, *e.g.*, failure of the cardia to relax or of the diaphragm and abdominal muscles to contract, will result in extreme nausea without vomiting. There may also be vomiting without nausea as in the innocent spewing of the six months old baby which is very much in contrast to the horrible nausea and vomiting of its mother a twelve-months previously. The former is a physiological process instituted by Nature to relieve an overloaded stomach; the latter is pathological.

Vomiting may be induced by local processes going on in the stomach or by stimulation of the vomiting center directly or reflexly. The vomiting center may be stimulated either by mechanical, peripheral, or psychic¹ causes or by toxic substances in the blood,—e.g., apomorphia or uremic vomiting. All diseases of the stomach must be eliminated before a case can be determined as due to reflex action.

The manner in which the vomit is expelled is significant and should always be considered; also whether or not nausea is present. Thus the pump-like projectile vomiting of acute tubercular meningitis is quite different in character and manner of expulsion than that following upon a too rich supper. The extreme nausea attendant upon the vomiting from a dose of ipecac is indeed unlike the mechanical vomiting excited by the first attempt to swallow a stomach tube.

Clinically: What is the significance of vomiting and what may be learned from an examination of the material vomited? In many conditions vomiting is only a coexistent, isolated symptom and is useful only in conjunction with other symptoms.

Is vomiting really present or is it merely a regurgitation of food from a pocket or obstruction in the esophagus? The presence of gastric juice or bile in the vomit will decide this point, and in chronic cases should never be overlooked. In very nervous patients the vomiting may be of esophageal origin when there is really no pocket or organic obstruction present in the gullet but simply a spasmodic contraction of some portion of the tube. The history of the case is, the fact that the food is easily raised immediately after eating, or that it developed after some mental shock will point to its true nature; the passage of a tube, under anesthesia if necessary, will settle the matter.

In the presence of vomiting we should inquire into the habits of the patient; of any errors in diet, which is the most fruitful cause of vomiting; notice whether nausea is present or not; the manner in which the vomit is expelled; whether a great effort is required, or does it spout out of its own will; is vomiting an unusual occurrence with this patient?

Examine the tongue, fauces and pharynx for the presence of a hair, string or other foreign body or evidence of the finger having been used to induce it. Examine the vomit to discover, if possible,

¹I know a physician who can not pass a certain place on a country road without vomiting, because long ago a skunk had filled the atmosphere with his odor as he was passing, the mental picture was sufficient to cause vomiting.

the presence in it of some article of food or odor of some drug which might have produced the trouble. Has the patient had a hyperdermic of morphia or other drug in the past twenty-four hours? Has there been a mental shock of any kind—great anger, bad news, or any particularly bad odor? Has an anesthetic been administered recently? Is there now or has there been recently any kidney trouble? Was the vomiting preceded, accompanied or followed by pain? Where was such pain and was it relieved or aggravated by vomiting? Is there prostration or collapse present? Is the patient an epileptic or has the head been injured in any way? Has there been unusually close mental application? Is there evidence of recent loss of blood? Did the patient faint? Is there a history of Ménière's disease or does close study cause a headache?

Many cases of sick headache and vomiting are due to eye-strain. Is there an epidemic of any kind of eruptive disease? They are nearly all—and in eruptive diseases I include cerebrospinal fever—accompanied by vomiting in the early stages, as is also yellow fever, malaria, cholera, cholera infantum, and sometimes mumps. In all these cases, in the early stages it is due to bacterial toxemia and later to the same or to nephritis or, perhaps, both causes.

Vomiting is often present in sepsis from any cause. Autotoxic vomiting may be present in many wasting diseases, as Addison's, Bright's, diabetes, etc. The vomiting present in rheumatism is usually due to the administration of the salicylates.

When have the bowels been thoroughly evacuated? Is there a rise of temperature? Examine carefully all hernial openings. Is the urine normal in appearance? Examine the vessel to see if there is a stain or sediment or an ammoniacal odor present. Examine the skin and sclerotics for evidence of jaundice. Look at the neck to see if a goiter be present. What is the age of the patient? Vomiting in a patient, aged over 40 years, with a flushed face and slow, full, pulse, may indicate an impending apoplectic seizure; cerebral vomiting is projectile, seldom accompanied by pain in the belly or by nausea. Any disease of the brain or its meninges is likely to present projectile vomiting as a striking symptom.

Is there a history of any form of colic? Has the patient been perfectly well for the last few months or has he lost flesh and felt badly? Is the skin clear or does it present a cachectic appearance? consider

the age, sex and time of day. Vomiting occurring at 6 a.m. in a robust young woman, aged 20 years, is very apt to be hysterical and deserves a good dose apomorphia. She may eat the most indigestible food and have no trouble, but a glass of water with the suggestion that it will make her sick acts as a prompt emetic and thus confirm the diagnosis.

Ejection of large quantities of greenish fluid should cause a very careful examination. In any acute abdominal condition it means danger; if, in connection with vomiting and fever, jaundice is now, or has been, present it would indicate perforation of the gallbladder.

Persistent vomiting indicates some serious lesion and the vomit soon contains bile and later feces. This is due to reverse peristalsis and indicates an obstruction in the lumen of the bowel in some part of its course. The recognition of bile is easy by appropriate chemical tests. Its cause may lie in the stomach or lower down in the intestinal tract. A history of repeated attacks of colic; the pain beginning in the right hypochondrium and passing through the body beneath the right shoulder blade, and tenderness half-way between the ninth costal cartilage and the umbilicus, with severe vomiting, and especially if jaundice be present, indicates the presence of a movable gallstone. If fever and rigors at irregular intervals be present with local tenderness and jaundice it means an infection of the gallbladder or ducts or both, which may or may not be associated with a stone or stones.

Vomiting of "sour water" every week or month with severe headache is due to migraine; gastric catarrh causes a coated tongue, feeling of distress in the stomach and vomiting of a water like liquid containing much mucus. If the stomach be irrigated much mucus will be found and the symptoms relieved for the time.

Alcoholics will vomit a small amount of sour-water early mornings, while in contradistinction the patient with a dilated stomach will vomit all he ate the night before and the liquids drank after. If the dilatation is of long standing the vomit may have a putrid odor. This odor is also found in other conditions, as carcinoma and pyloric stenosis but usually even here dilatation is associated.

Grass green vomiting is seen in peritonitis and intestinal obstruction before stercoraceous vomiting begins.

Stercoraceous vomiting always means an obstruction of the bowels, either incarceration (hernia internal or external) invagination, volvulus,

adhesions either of the bowels or by bands or from congenital defects. All hernial openings must be carefully examined. If the obstruction is high up the fecal vomit occurs early; if lower down it will be later showing up, and if very low down there may be only belching of putrid gas.

Bloody vomit may be due to the action of a corrosive poison, but it usually indicates the presence of an ulcer, carcinoma, obstruction to the portal circulation, an injury, or that the blood has been swallowed.

Examine the tongue, throat, gums, buccal cavity and nose, for any source of blood. If it is an infant examine the mother's nipples. Blood may be swallowed from any injury or ulceration above the cardia. Hard, continued retching might result in laceration of some delicate vessel; a burn of the abdominal wall will sometimes produce such extreme congestion as to result in hemorrhage from the stomach. Any lesion of the liver producing obstruction of the portal circulation may cause a gastric hemorrhage. Pathological conditions of the blood as anemia, hemophilia, purpura hemorrhagica, scurvy and occasionally chlorosis and vicarious menstruation may cause bloody vomit. These conditions have so many well-marked concomitant symptoms that they will not be further considered here. The remaining conditions—gastric ulcer and carcinoma—will be considered in more detail.

Gastric ulcer occurs most frequently in women, in proportion of two to one; more frequent in early life. The largest number of cases occurring before the age of 30 years. Vomiting occurs soon after a meal and is preceded by acute, agonizing pain which is markedly relieved by the vomiting; blood, when present, is usually clear and may be in large or small quantities; several hours after the first hemorrhage some discolored blood may be vomited, due to the effects of the juices present on the blood remaining after the previous attack; there is no cachexia but rather a bright—even if anemic—skin; often there is no extreme emaciation; there is an excess of HCl; absence of lactic acid and an increase of ferments; only when the ulcer occupies the anterior border or pylorus and is of long duration will there be a palpable tumor; the duration is long; water-brash is common; bacilli are absent.

In contradistinction, cancer occurs in 90 per cent of cases above 30 years of age; in 77 per cent the patient is over 40 years of age; the pain is more persistent in cancer than in ulcer but not so acute and

agonizing; vomiting occurs longer after a meal and does not relieve the pain; the amount of material vomited may be very large and of putrid odor from having remained a long time in the stomach; HCl is absent or present in very limited amounts; lactic acid is present and ferments absent, Oppler-Boas bacilli is present. Blood is rarely vomited in a normal condition but has a coffee ground appearance and is often decomposed and tetid. Sour-belching is common. Cachexia is always present and shows quite a contrast to the clear skin of a patient with gastric ulcer. Tumor can often be made out. Duration is comparatively short. The patient with an ulcer will vomit after almost every meal, while the carcinomatous will vomit once a day or may be only every two or three days. Emaciation is progressive and extreme.

Pus may be found in the vomit of a carcinomatous patient but usually indicates the rupture into the stomach of an abscess.

Vomit consisting chiefly of saliva occurs when nausea has existed for some time, such vomiting occurring early in the morning may indicate a pharyngitis and that saliva and mucus has been swallowed during sleep—*vomit* *matutinus*; neurasthenics will vomit a material very like the foregoing. In these cases the upper lumbar and lower dorsal vertebra are usually tender—especially if it be a case of sexual neurasthenia.

Vomit possessing an ammoniacal odor is nearly always due to uremia.

Persistent vomiting may cause a scanty secretion of urine and the mistake must not be made of attributing the vomiting to uremia in the absence of other symptoms.

Vomiting of large amounts of food, practically unchanged, hours, or days even, after it was eaten means an atrophy of the gastric glands.

Nausea in early morning, when the stomach is empty, with little or no vomiting is present in gastric catarrh or chronic gastritis.

Periodic vomiting comes on very suddenly with ejection of large amounts of material and repeated each time anything is taken into the stomach and accompanied with a great deal of nausea. Usually no cause can be assigned for the beginning of the attack; it gradually grows less and disappears in a few days until another attack occurs. Cyclic vomiting of childhood resembles periodic vomiting of adults; it rapidly prostrates the child with but little if any fever; the vomit is

extremely acid; the interval between attacks is variable; the history and attendant symptoms must always be considered. The grave prostration is rapidly recovered from.

Vomiting with acute agonizing pain in the lower abdomen, especially if it radiates down the leg or into the labia indicates hemorrhage into, or twisted pedicle of, the corresponding ovary.

Vomiting, pain in the right iliac region, which pain radiates across the abdomen about the umbilicus. below the umbilicus oftener than above it, with rigidity of the right abdominal wall with some fever means appendicitis; and if there is a history of repeated attacks the evidence is strong enough to *demand* an operation.

In perforating ulcer of the intestines, in addition to vomiting, there is pain, collapse, rapid pulse, and signs of a rapidly developing peritonitis. In the passage of a renal calculus there may be vomiting with grinding pain down the groin, radiating into the glans penis or testicle—the labia and meatus, if a woman—and great desire to urinate with but a very scant amount passed. The testicle is retracted. A very sudden onset with a bloody urine and pain in the loin may indicate a twisted renal pedicle.

Vomiting, with violent boring pain, just to the right of the median line above the umbilicus means gallstone in most cases; *preceded* by violent pain in the epigastrium and collapse, it is indicative of acute pancreatitis or hemorrhage into the pancreas. If attended by jaundice it indicates an obstruction to the ductus communis—usually an impacted stone but if the patient is over 40 years of age, cancer should be seriously considered. The gastric neuroses give a sour, watery vomit. The vomiting of pregnancy belongs, in most cases, to the neuroses. The testicle or ovary when acutely inflamed will produce nausea but little vomiting. Vomiting, pain, and diarrhea following an oyster supper likely means ptomain poisoning; following the eating of raw meat it may indicate trichina poisoning.

The gastric crisis of locomotor ataxia is an example of spinal vomiting and is likely to occur in the early stages of the disease. It resembles periodical vomiting, and in the presence of such case one should look carefully for other signs of tabes. Vomiting may be quite a prominent symptom in cerebrospinal sclerosis.

The sympathetic nervous system is much concerned in some forms of vomiting, *e.g.*, the vomiting due to relaxation of the os uteri during labor.

The various poisons which cause vomiting may often be detected by the presence of their peculiar odor in the vomit but all symptoms must be considered because but little time is at hand to make chemical tests. Laudanum has its odor; phosphorus glows in the dark; Paris-green turns blue in presence of ammonia; arsenic and mercury produce painful, bloody actions from the bowels.

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The Treatment of Retroflexion of the Pregnant Uterus.

The frequency of retroflexion of the pregnant uterus stands in proportion to the percentage of retroflexed uteri in general. Retro-displacement of the uterus is, in itself, no obstacle to conception. On the contrary, several authors ascribe to this faulty position of the uterus a predisposition to conception. The os externum uteri lying in the direction of the vagina, readily receives the sperma. The reason why we are comparatively rarely called upon to treat a case of retroflexion of the uterus in pregnancy, is, that in the overwhelming majority of instances the gravid uterus rights itself and ascends into the abdominal cavity. In other cases, the condition is not recognized until spontaneous abortion takes place and necessitates medical examination and interference. In the minority of cases, however, in which neither of these issues occur and in which the pregnant uterus remains in its abnormal position within the pelvic cavity, we have to deal with a condition which may bring with it very grave dangers to the life of the patient. Characteristic symptoms are, as a rule, absent during the first three months of gestation. Only occasionally may excessive vomiting lead to the detection of the malposition; or intense backache and bearing down pain, or disturbances of urination may bring about a gynecologic examination. The picture becomes suddenly changed when, at the end of the third or the beginning of the fourth month, the growing uterus encroaches upon the posterior pelvic wall and fills more or less the entire pelvic cavity. If, at this stage, spontaneous replacement of the uterus, or abortion do not take place, the uterus becomes "incarcerated." The anterior wall of the uterus being arrested in its further growth by the sacral promontory, the posterior wall becomes more and more distended; the cul de sac is

pushed downward, the rectum compressed, the posterior vaginal vault and at times even the perineum bulge outward. In a case reported by Halbertsma¹ the uterus protruded through the widely gaping anus, in those of Grenser and Mayer² the uterus ruptured the posterior vaginal wall and appeared in the vulva.

Proportionately with the downward extension of the uterine body, the cervix proceeds upward, and the vaginal portion may be finally situated at or above the upper edge of the symphysis. The consequence is a disturbance in urination which gradually results in a complete retention of urine. Cystitis is the first result of such retention. The urine which undergoes ammoniacal decomposition, contains abundant quantities of pus. The inflammation spreads to the adjacent tissues (pericystitis) and the peritoneum. In the bladder itself, the cystitis takes on a gangrenous character. The bladder mucosa is more or less extensively exfoliated, and in neglected cases, the muscularis and even the serosa are destroyed. Thus, sepsis and pyemia may lead to the death of the patient, or the inflammation ascending within the ureters, will reach the kidneys and may, thus, cause death from uremia.

These serious sequelæ of retention caused by retroflexion of the pregnant uterus stand in striking contradistinction to our experiences with others forms of urinary retention. It is well known that prostatic hypertrophy with consecutive retention of urine very rarely produces similarly serious affections of the bladder. Only quite recently George W. King³ reported a case of enlarged prostate which had caused a urinary retention of five days standing. Yet, though symptoms of uremia were already present, patient rapidly recovered after prostatectomy without any complications on the part of the bladder. In gynecologic practice retention of urine from various causes is not very infrequent, yet exfoliative cystitis is an occurrence of extreme rarity in such cases. I myself had occasion to make two such observations. An unmarried woman, aged 41 years, was sent to me for operation for uterine myoma. For the past two years she had, in addition to menorrhagias and pain from pressure of the tumor, disturbances of urination. Upon examination, the bladder was found extending upward as high as the umbilicus, the uterine tumor lying in pronounced retroflexion in the posterior cul de sac. Within the last twenty-four hours previous to the laparotomy, 29, 36, and 24 ounces of urine respectively

were obtained by catheter as the patient was unable to void urine. The urine was slightly cloudy with traces of albumin. During convalescence, the bladder was frequently irrigated with astringent solutions and had, four months after operation, regained full capacity and function.

In a second case, that of a girl, aged 21 years, with retroflexion of the uterus due to physical overexertion, total retention of urine had existed for almost twenty-eight hours. I drained through catheter 49 ounces of a clear urine without any albumin, and replaced the uterus. No cystitis nor return of the retention occurred.

Even in pregnant women, total retention may exist without cystitis provided the uterus lies in normal position. Birnbaum⁴ reported such a case. A III para with initial symptoms of tabes had a complete urinary retention. The bladder extending to the costal arch contained almost five quarts of urine. The latter was clear and showed neither albumin nor sugar. The uterus corresponding to the fourth month of pregnancy, was in normal ante flexion. We are, then, induced to assume that in retroflexion of the pregnant uterus there must be some peculiar factors which cause cystitis and gangrene. The attempts at explanation have been numerous. Infection of the retained urine by catheterization and slight traumatisms of the bladder mucosa by the catheter itself (Kleim),⁵ long lasting pressure of the incarcerated uterus upon the arteries (Pinard and Varnier),⁶ and also upon the veins of the bladder (Wertheim),⁷ etc., have been suggested. These explanations are to my mind not quite sufficient. For the same etiologic factors are in existence in prostatic hypertrophy where frequent catheterization is done, or in cases of incarcerated fibroids such as the one reported above, where intense and long lasting pressure was exercised upon the neck of the bladder.

I should like to suggest that the condition of the urine in pregnancy and the softened, less resistant tissues within the small pelvis furnish a plausible explanation. The absolute quantity of urine secreted within twenty four hours is greater in pregnancy than under ordinary conditions. The plus is made up by an increase of water. The reaction, then, becomes fainter acid, or even neutral, and the opportunity to rapid ammoniacal decomposition is given. Moreover, the tissues throughout the pelvis are in a state of serous transsudation which softens and, to a certain extent, weakens them. This view seems to

be well in accord with the statistics of Pinard and Varnier that gangrene of the bladder has been observed in 8 cases of difficult confinements, in other words, in conditions in which a long lasting pressure was exercised upon less resistant tissues, and where retention of urine is of common occurrence. Other complications, such as obstruction of the bowels, perforation of the necrotic bladder into adjoining structures, septic endometritis, rupture of the symphysis, etc., are too rare to require elaboration.

Only the case reported by Dienst⁸ may be mentioned. A woman, aged 41 years, who has had twelve confinements and six miscarriages, was in the fifth month of her nineteenth pregnancy. For the last eight days prior to her admission to the hospital, she had been unable to void urine so that the attending physician had to resort to catheterization. During the last four days, she had not expelled any flatus, the abdomen was greatly distended, the pain was excruciating, and vomiting was frequent. Careful examination revealed an incarceration of the retroverted pregnant uterus which was complicated by total obstruction of the bowel and necrosis of the bladder. Reposition of the uterus though exceedingly difficult, was finally successful, the symptoms of ileus gradually subsided, the urine slowly returned to its normal state. Two days after the reposition, abortion took place which required manual removal of the placenta, and curettement. The further convalescence was disturbed by a thrombophlebitis of the left leg, but the patient ultimately recovered. The outcome in this case was more favorable than in the instances reported by Treub,⁹ Gottschalk¹⁰, and Heymann¹¹, where an ileus produced by the same cause, led to the death of the patient.

We have seen from the above that, with few exceptions, bladder symptoms stand in the foreground of the clinical picture in retroflexion of the pregnant uterus, and it seems quite natural that this observation has exerted a strong influence as regards the therapy of this condition. The fact that in the majority of cases, the retroflexed uterus corrects itself, has induced a number of authors to rely entirely on an expectant treatment. This standpoint is very strongly expressed in a recent article by Herman¹². This writer denies that retroflexion of the pregnant uterus brings with it the danger of abortion and considers the frequent use of the catheter the only necessary treatment. In 48 out of his 115 cases, the uterus righted itself when the patient was kept in

recumbent position and the bladder frequently emptied. In a similar way, Charles¹³, in a case in the fourth month, assisted Nature only in so far that he kept the patient in bed and made her assume the knee-chest position several times every day. Furthermore, he emptied bladder and rectum regularly and frequently pushed the fundus uteri upward. Spontaneous reposition occurred two weeks afterward.

Pinard and Varnier who first called attention to the importance of the bladder in retroflexion of the pregnant uterus, point out that catheterization should be discontinued so soon as the urine ceases to be normal. It seems to me that the repeated use of the catheter is by no means a harmless procedure. Even under the most careful precautions, the introduction into the bladder of bacteria living in the urethra (Savor,¹⁴ Taussig,¹⁵ etc.) can not be avoided with certainty, and observations made with protracted catheterization after operations are ample proof for this assertion.

By this expectant treatment, then, we encounter the risk of making the existing condition worse. We are unable to foretell whether, in the individual case, the uterus will right itself, or whether the retroflexion will result in abortion, or lead to incarceration with all its grave consequences. It is only logical to remove the *causa peccans*, i.e., to correct the malposition so soon as we see the patient. Moreover, the reposition becomes imperative when incarceration has already occurred.

We have a number of methods at our disposal to effect reposition. In every case, the bladder must first be emptied. This may, at times, be extremely difficult. In some cases, the dislocation of the urethra and the edema of the external genitals may obscure the meatus urinarius. The stretching and compression of the urethra necessitate the use of the elastic male catheter. In some instances, catheterization will remain unsuccessful until the patient assumes knee-chest position, or until the pressure of the uterus is somewhat relieved by traction upon the vaginal portion or by pushing the uterus away from the symphysis. It is always a serious mistake to empty the bladder too rapidly. One should use either a thin catheter, or stop the flow of urine from time to time so as to allow the overdistended bladder to adapt itself to the change in the condition. Without this precaution, very untoward accidents may occur.

The usual method of reposition is manual reduction with or with-

out knee-chest position. This is, as Herman¹³ justly remarks, too rude a procedure. A rough handling of the uterus is unavoidable, and as reposition, for reasons detailed above, will usually be necessary at the beginning of the fourth month, at a time when interruption of pregnancy occurs most easily, abortion is likely to follow. The same objection can be raised against reposition under anesthesia with two fingers in the rectum. Moreover, success is by no means certain. The two fingers of the inserted hand can not exercise a sufficiently equal and continuous pressure upon the entire surface of the retroflexed uterus to overcome any but the mildest forms of incarceration.

An excellent way of replacing the non-pregnant uterus has been devised by Kuestner.¹⁶ The technic is as follows: A vulsellum is applied to the vaginal portion, and the latter is, with a strong steady traction, pulled downward into the entrance of the vagina. By stretching the axis of the uterus, the retroflexion is thus changed into a retroversion. The handle of the vulsellum is now raised as high as possible toward the symphysis, and the instrument, in this position, is pushed back into the vagina. The body of the uterus is thrown forward and slides, under continued pressure, along the sacral wall past the promontory into the abdominal cavity.

I doubt whether this procedure which is otherwise so successful, should be applied in retroflexion of the pregnant uterus. Here the tissues are friable and hyperemic. The vulsellum in the anterior lip is apt to tear out or, at any rate, produce a copious hemorrhage. The downward pull must of necessity be unusually strong in order to straighten the uterus and, again, the soft and flabby organ will not necessarily yield to the energetic push from below. Theoretically, the same objections can be raised against this method as against manual reposition, and abortion may occur even if the reposition was successful.

Reposition by means of a rubber bag inserted into the vagina is a procedure greatly preferable to the two just mentioned. The colpeurynter is filled either with air (Wohlgemuth,¹⁷ Westphalen,¹⁸ etc.), or with water (Seeligman,¹⁹ Albert,²⁰ Edgar,²¹ etc.) Herman¹³ disclaims any efficacy of the elastic balloon, but he overlooks the fact that in order to accomplish an upward pressure, the pelvis of the patient must be raised.

The insertion of the colpeurynter into the rectum (Mueller)²² is less advisable.

Funke²³ suggested to fill the colpeurynter with metallic mercury instead of water or air, a procedure which has first been tried by Halban.²⁴ I have called attention to this method in a former publication.²⁵ As the modern American text books on obstetrics (Edgar, Webster, Williams) make no mention of the mercury colpeurynter, I repeat here the description of the technic of its application.

Two colpeurynters of Braun are connected by means of a stop-cock made of hard rubber, so that the whole length of the apparatus is about 60 cm. Before connecting this apparatus, one of the colpeurynters is filled with 1000 grams of metallic mercury, while from the other the air is evacuated by compression of the bulb. The patient is placed in a comfortable recumbent position on a bed or couch, the foot of which is elevated about 50 to 60 cm. The empty colpeurynter is first disinfected in the usual way; then it is folded about itself like a tightly rolled cigar, introduced into the vagina with a dressing forceps and placed into the posterior vaginal vault against the uterine fundus. It is retained in this position by means of two fingers, while the filled colpeurynter is elevated with the other hand, allowing the mercury to flow downward. At first not more than 250 to 500 grams of the mercury should be used, and only if reposition fails, may, on the second day, the whole amount be emptied into the inner colpeurynter. The closed valve prevents the return flow of the mercury. To remove the filled colpeurynter from the vagina, the patient is permitted to sit upright, when on opening the valve and lowering the empty colpeurynter, the mercury is readily transferred from the former to the latter.

I do not hesitate to pronounce the mercury colpeurynter the ideal treatment in retroflexion of the pregnant uterus. The results reported by Funke,²³ Wertheim,⁷ etc. are satisfactory to the highest degree.

I myself had occasion to note the prompt effect of this method in the following case. Mrs. C., aged 30 years, has been married about six years. She has miscarried twice, five and one-half and four years ago, without tangible reason. Both abortions occurred in the fourth month of gestation. She was now two and one-half months pregnant and wished to know whether this child could be saved. She had only insignificant subjective symptoms of pregnancy. Upon examination, re-

troflexion of the pregnant uterus was found. The patient was brought into Trendelenburg's position upon the examination table, and the colpeurynter inserted and filled with about 750 cc of metallic mercury. It was left in place for fifteen minutes and then removed. The uterus was now in normal position and was kept forward by a Hodge pessary. This was removed four weeks later. Pregnancy continued undisturbed. Spontaneous childbirth seven months later.

The timely reposition, in this case, prevented abortion which, in the two former pregnancies took place spontaneously. It must be emphasized, against Herman, that even in a highly mobile uterus spontaneous reposition need not occur. From the anamnesis it appears that the patient had no pronounced urinary disturbances previous to the former abortions so that catheterization alone would not have sufficed to save the gestation. In this case, a single application of the mercury colpeurynter had the desired effect, while in others this procedure may have to be repeated the following two or three days. In some cases the inclination of the pelvis must be increased. Reposition will almost invariably be achieved as retroflexed gravid uteri are nearly always movable. The reason for the absence of dense adhesions is this, that primarily adherent uteri, are, as a rule, incapable of conception. Only occasionally may adhesions form during pregnancy, but they are then fresh and delicate so as to be easily stretched or broken.

The advantages of the mercury bag are self-evident. There is a gentle continuous pressure which acts upon the entire posterior surface of the uterine body. The latter is pushed in the direction of least resistance, *i.e.*, to the side of the promontory where there is no obstacle in the way, toward the abdominal cavity. The procedure causes absolutely no pain so that narcosis is superfluous, and is free from the danger of inducing abortion. Moreover, the colpeurynter, when filled with the mercury, is so little distended that it finds sufficient room even in the narrow vagina of a primipara.

After successful reposition, the uterus should be kept in place for a few days or weeks by a pessary.

Instruments which have been devised by several authors to effect reduction of the retroflexed uterus, so called repositors, have justly been discarded.

Before attempting reposition, an exact diagnosis should be made

in every case. Diagnostic errors may have very serious consequences. The differential diagnosis is chiefly from ectopic pregnancy. If reposition be tried in such a case, rupture of the pregnant tube may occur. The diagnosis of retroflexion in a case of retrouterine hematocoele is not less dangerous. Asterblum²⁶ quite recently reported such an instance. An incision into the tumor supposed to be a hematocoele, was made through the vagina, and it was found that the tumor was the uterus, which contained a four months fetus. Death resulted from peritonitis.

In relatively rare cases reposition fails. This may be due to a contracted pelvis with an overhanging promontory, or to adhesions which have formed, secondarily, above the incarcerated uterus. For such cases, artificial abortion has been suggested. Induction of abortion, however, may be extremely difficult, if not altogether impossible, because of the inaccessibility of the vaginal portion. In this difficulty, Hunter, Spencer Wells, Schatz, Crédé, Olshausen, Martin, Wyder, etc.,⁷ have resorted to puncture of the uterus by the vagina. Olshausen and Saenger prefer colpohysterotomy as suggested by Skutsch.²⁸ An incision is made through the posterior vaginal vault into the uterine cavity, the latter is emptied, and the walls of the uterus are sewed up immediately.

In neglected cases of retroflexion of the pregnant uterus, in which gangrene of the bladder has already taken place, reposition or induction of abortion are contraindicated. Even slight pressure or traction may here lead to perforation of the friable walls of the bladder. A wide incision into the bladder, either suprapubic or vaginal, may yet save the life of the patient. In cases of beginning necrosis of the bladder, however, very cautious attempts at reposition are still justified (Saenger.)²⁷ In very rare cases, finally, laparotomy has been performed to free the uterus from its abnormal fixation.

The most comprehensive treatises on our subject have been published by Wertheim,⁷ who has frequently been cited in the foregoing, and especially by Chrobak.²⁹ The excellent monograph of the latter affords ample information to those who wish to study the question in every detail.

The main object of these lines has been to emphasize the value of the mercury colpeurynter in cases of retroflexion of the pregnant uterus. Its application is easy and free from any danger, and the re-

sults thus far obtained have been so prompt and satisfying that it is to be expected that the use of the mercury colpeurynter will in time play the most prominent part in the treatment of retroflexion of the pregnant uterus.

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- ²⁹Chrobak.—*Samm. Klin. Vort.*, No. 377, 1904.

GEORGE GELLHORN.

Passive Hyperemia.

More than ten years have elapsed since Bier became convinced that inflammation was something useful, hence, he attempted to promote it whenever indications warranted. He has found that the best means for increasing existing inflammation is by passive hyperemia. At first Bier confined his treatment to chronic joint affections but as time advanced, and as the results were so satisfactory he gradually extended the sphere of his method of treatment until at present he applies it in all cases of accessible suppuration.

About a year ago he called attention to the results secured in the treatment of acute infections. The treatment advocated was as follows: When the infection was localized in an extremity an elastic bandage was wound several times around the limb as far as possible above the focus of inflammation, and gradually tightened until the desired degree of congestion has been secured; there should be great "congestion hyperemia." Comparatively loose constriction will accomplish this in case of acute inflammation. The congestion should induce a fiery red edema. Bier emphasized the importance of securing a red hyperemia; a complete stoppage of the venous circulation, with the resulting blue hyperemia, is regarded by Bier as productive of more harm than good. Guth states that the cessation of the pain is his criterion for the amount of constriction necessary to induce the proper dose of congestive hyperemia.

The limb swells, becomes edematous and fiery red and feels warm. If these phenomena are not observed after the constriction, then the affection has passed its acme and is already on the road to recovery. Usually, the constricting bandage is worn for ten hours a day; severe cases require twenty to twenty two hours' application. The bandage should produce immediate relief; if the bandage causes annoyance or pain, the technic is at fault. The patient must be under the constant attention of the physician. Stich records an instant in which the constriction was applied without due medical supervision with the consequence that the arm became permanently constricted, with chronic edema and inability to use the fingers. This was because the bandage had been applied for an undue length of time.

In incipient acute suppurative inflammations of every kind, Bier claims that the treatment is very gratifying. He contends that failures in its application are due to improper technic. Passive hyperemia does not take the place of incision; it enables the surgeon to dispense with large incisions and packing. The process is much shortened. Bier's experience has been fully corroborated by other German investigators. Küttner has treated more than one hundred cases of boils, felons, phlegmons, infected wounds, lymphangitis, etc., with very gratifying results. Bauer reports cases of amenorrhea in which the passive hyperemia treatment gave good results. He employed a speculum tube for inducing the passive process. Eversmann has employed Bier's method in cases of endometritis, lymphangitis of the breast, etc., with

excellent results. Colley believes that the method has a great future in the treatment of certain chronic skin affections.

When the disease is located on the head or trunk, a suction apparatus of glass with a rubber bulb exhaust has been employed by Bier.

Just how passive hyperemia accomplishes the results is somewhat obscure. Bier contends that the constricting bandage not only dams back the venous blood, but the lymph stream is also interfered with. When the bandage is removed, however, there is a decided increase in the circulation of both blood and lymph. Wright has found that an increase in the lymph circulation stimulates the formation of anti-toxins. Bier feels confident that the retarding of the circulation of the blood renders harmless the bacteria and their toxins in the part and prevents necrosis by the superabundant nourishment it supplies.

Whether the constricting band induces a dilution of the toxins by the edema, and thereby assists Nature in overcoming the infection remains a moot question. Experience had taught our forefathers that the bite of a venomous serpent could be prevented from destroying the life of the individual, if a tight band was immediately applied between the site of the injury and the patient's trunk. The band was, at the expiration of a short time, gradually removed, thereby permitting the poison to reach the circulation in a very gradual and dilute manner.

The excellent results secured by Bier will cause many others to try the technic. Great care should be taken since irreparable injury may be done.

E. A. BABLER.

CURRENT EDITORIAL TOPICS.

Law Versus Medicine.

"A pleasing illustration of co-operation between lawyer and doctor, is the recent action of the Chicago Bar Association, in requesting information from the Chicago Medical Society, regarding unprofessional conduct of any member of the Bar Association. This request was elicited by the action of a certain attorney in soliciting from medical men, personal injury cases, on a contingent basis and offering 25 per cent of his fees to the doctor. The Bar Association, having for its purpose, among other things, the maintenance of honor and in-

tegrity in the practice of law, believes this to be unprofessional and tenders its services to the Chicago Medical Society, not only in reference to this particular matter, but in any other will aid in the objects of the organization."

With these words an interesting editorial (*Jour. Michigan State Medical Society*, April) introduces a very important subject, and comments on the interdependence of two great learned professions. As a rule, reputable attorneys are fair to members of the medical profession when testifying as to matters of fact or experience.

The gradual assumption of control of expert testimony by the courts is indeed gratifying. To quote again:

"In addition to the reformation of expert testimony and the elimination of unprofessional commercialism in personal injury cases, there remains one important step to be taken in the co-operation of lawyer and doctor, *i. e.*, the protection of the doctor against legalized black mail, to which he is subjected at the hands of many lawyers, by reason of suit or threat of suit for alleged malpractice.

"Inasmuch as the doctor is legally accountable for the possession of but an *average* amount of knowledge and skill, instances of actual malpractice are rare and yet, 5 per cent of American physicians are, each year, harassed by suit or threat of suit for alleged negligent or unskillful treatment.

"The usual underlying cause of these threats, as is also true of most personal injury cases, is the zealous desire of attorneys to get business, even though on a speculative basis. Business done on the no cure, no pay basis, is hardly professional for the doctor. Why, then, is it professional or even justifiable for the lawyer?"

The Trained Nurse.

Considerable interest now is manifested in the "overtrained" nurse. Not long ago the training of nurses was discussed at a meeting of the New York Academy of medicine. Dr. Thompson (*American Medicine*, March 31, 1906) in a paper very forcibly urged that the nurse of today was very much overtrained, "that her pseudoscientific training was a mistake, that the time of training was too long, that legislation in behalf of the trained nurse was not desirable, and that the charges of nursing are too high."

Says the Boston *Medical and Surgical Journal* after giving the views expressed at the meeting:

"This attitude toward the question of nursing will no doubt be accepted by a large number of physicians who have never given expression to their thoughts. It is right and proper that there should be much plain speaking now if the situation is not to become still more strained in the future. Certain matters are established. The patient's welfare is the first consideration. This must be cared for by the physician with the complete co-operation of the nurse. Anything which disturbs the relation either between patient and nurse or between nurse and physician is detrimental to the best good of the patient. Physicians are finding fault because this relationship is being disturbed, and this, in the minds of many, is due in last analysis to what may be bluntly called, overtraining. If a nurse is obliged to devote three or four years to her training, with the prospect thereafter of approximately ten years of active life, the tendency for charges to become greater is inevitable and natural. The patient suffers inasmuch as he is paying for a sort of knowledge which is not required, and in fact which is often detrimental to the simple and conscientious performance of the disagreeable duties of the nurse. The conclusion, therefore, to which those to whom we have referred have come, and which we share, is that the overtraining of nurses must stop; that the nurse's work should be looked upon as a vocation and not as a profession, and above all things that knowledge of whatsoever sort can never take the place of tact and proper feeling in the sick room. To take retrograde steps in any movement is difficult, but we are convinced that the time has come for those in charge of training schools to look the ground over carefully in view of present lay and professional opinion and to reorganize in many instances the over elaborated curriculum on a more practical basis."

Quack Remedies.

It may be a comfort to those who find quacks overrunning the country to note that newspapers pandered to the wiles of the quack almost one hundred years ago. To quote from *American Medicine*:

"Quack remedies in 1816 are well described in a book on Hypochondriasis, published about 1820, by Dr. George R. Rowe, F.R.C.P. and F.R.C.S. On page 30 he refers to the use by a patient "of various empiric remedies, which are daily offered to the public as infallible and innocent in their composition, although they contain drugs of the most pernicious nature, and so far from being an antidote, become a powerful auxiliary to the rapid progress of that disease they are warranted to cure." The newspapers of a century ago were far worse offenders than they are today, for all the advertisements were

the boldest kinds of frauds, and moreover the venders used the press to accuse each other of dishonesty and various misdemeanors. The issues of London papers of November, 1805, which contained the accounts of Nelson's death and victory at Trafalgar, are said to contain quack advertisements which are more interesting now than the war news:

"HOWLEY'S INVALUABLE FEVER PILLS.—BEING the best and safest Medicine ever offered to the Public for the certain and speedy CURE OF FEVERS, PAINS in the STOMACH, and VIOLENT HEADACHES, even when affecting the Senses.—Two only, at once taking, cured Mr. John Sartin, a shoemaker, supposed to be on his deathbed, of a violent Fever, of which his wife had died, and he never ailed anything for 20 years afterward. Mr. Earmer, of Court street, Whitechapel, many years ago, was cured by them within two days, of a violent headache, which affected his senses, and so as to have had no return since, of which he hath given a Certificate."

Stalagmometry – A New Method of Clinical Research.

Physical science continues to furnish scientific medicine with many means of investigation. The Roentgen ray for example, has abundantly proven its worth. The study of osmotic pressure by the determination of the freezing point or the electrical conductivity of fluids has not yielded the favorable results anticipated. A new study goes under the name of stalagmometry and consists in the determination of the relative degree of surface tension possessed by the fluids of the body. The principal work on this subject has been done by Traube and his students. To quote from the *Medical News*:

"Prof Traube is one of the ablest exponents of the doctrine that physical forces underlie most of the important vital processes. Of these forces, the one that enters largely into the most diverse manifestations of life is surface tension. Otherwise known as capillarity, this force represents a tendency on the part of liquid surfaces to contract. The familiar method of measuring the surface tension of a liquid is by means of a capillary tube. But Traube invented a simpler method. He devised an instrument, which he named the "stalagmometer," which measures the number of drops that might be obtained from a given volume of liquid. The stalagmometer consists of a simple glass tube, bent in a certain manner, graduated at one part, and provided at its upper end with a rubber bulb, by means of which the liquid may be drawn up into the narrow bore. The lower end of the tube is slightly expanded into a flat surface, from which the drops may be al-

lowed to fall. The greater the number of drops the less is the surface tension of the liquid.

"A great many physiological phenomena, which have been attributed to the operation of osmotic pressure, are really the result of differences of surface tension. Thus, Traube discovered that a solution of low surface tension will pass through a membrane into a solution of higher surface tension. The surface tension of a liquid largely depends upon the nature of the substances dissolved in it. Thus phenol diminishes the surface tension of its solvent. A fact of great significance in relation to the subject of intestinal absorption is that peptones reduce to a great degree the surface tension of liquid in which they are dissolved, while proteids do not. As the result of this diminution of surface tension, the peptones pass from the lumen of the intestine into the blood. This explains why the stomach and intestine contain only dilute solutions of peptone, as determined by Bernstein, for these are absorbed as rapidly as they are formed."

The simplicity of this procedure would make it a valuable clinical test, if further experience with various body-fluids corroborates the discoveries of Traube. It has been found as regards the gastric juice that the severer the disease of stomach the higher the is stalagmometric index. The urine has a high index and it varies very much in different diseases. A study of surface tension of the blood and lymph may reveal interesting functions of the circulation. In pharmacology the method has already given valuable hints. To quote again:

"One very important application of these studies on surface tension is to the problems of immunity and to the therapeutics of antitoxins. Thus, tetanus toxin travels to the brain by way of the fatty nerve fibers, while antitoxin chooses the vascular path. The toxin penetrates the cells while antitoxin does not. The toxin is dissolved in the lipoids of the brain-tissue, while antitoxin is dissolved in the cerebrospinal fluid. The toxin dissolves red blood cells, while antitoxin does not. It is plain that tetanus toxin osmose and dissolves in lipoids with ease, while tetanus antitoxin does not. Traube suggests that it would be necessary, in order to increase the efficiency of tetanus antitoxin, and probably of other antitoxins, to add to them capillary-active substances, so as to increase their power of traversing the cellular and tissue membranes."

The Nature and Cause of Old Age.

Professor Minot of Harvard delivered a fascinating lecture on old age, before the Harvey Society. The New York *Medical Journal*,

April, 1906, gives the essential points and comments critically on this address. The modern biologist is attacking the problem of old age by the same means, which has so beautifully made clear the development of life. To quote:

"That this subject could profitably lend itself to laboratory investigation is a fine tribute to the extraordinary advances of modern biology. Indeed, the biologist is the only one who could possibly be expected to answer the riddle of old age and mortality, if such an answer were possible. The practitioner who daily encounters manifold phases of senility may, in the course of the speculation which such phenomena can not fail to arouse, compare it to the familiar atrophic, degenerative, and toxic changes in the organism, but this is merely skimming the surface of the problem. On the other hand, the biologist probes into the inmost recesses of the cell, and in its gradual development he discerns the causes that determine the ultimate decline and cessation of the vital process."

The percentage of growth diminishes from birth onward. The growth of the fetus is more rapid than that of the animal after birth. To quote again:

"Associated with the remarkable decline in the rate of growth that occurs from the very beginning of individual life, there occurs a whole cycle or series of changes in the structure and development of the cells or entire generations of cells. This cycle is called by Professor Minot "cytomorphosis," and consists of three stages, namely, the embryonic, that of differentiation, and that of degeneration. The stage of differentiation comprises two forms, cytostatic and cytodynamic. In the cytostatic variety of differentiation the object is to produce a material having a definite composition, like the intercellular substance of bone. In the cytodynamic variety substances are produced that have an active metabolic function, like the products of the secretory activity of glands. In the static differentiation the protoplasm is early sacrificed, is changed into something which is not protoplasm."

The size of an animal depends on the number and not the size of the cells; and as the animal ages the most marked change in the tissues is the extraordinary growth of the protoplasm at the expense of the nuclei. The loss of power of growth depends on the growth of the protoplasm; differentiation and decline in rapidity of growth are interdependent. The writer continues:

"The child is born with an immature brain, and the development of most of its nerve cells goes on after birth. At the end of the first year it has acquired conception of time and space and of color and sound. During this period it has learned more than it does at any subsequent period. It is a familiar experience that the power of acquiring knowledge diminishes as one grows older. This falling off in the development of the brain cells is characterized as the condition of "permanent fatigue." The average person reaches this early. Permanent fatigue is a characteristic of old age, whose nature is thus better understood by a study of the final developmental changes in the cells than by the study of the macroscopic phenomena of sclerosis and degeneration."

Unwelcome Visitors.

The London *Lancet* finds that one of the chief sources of discomfort to the physician is to be found in the unnecessary disturbance of routine produced by an unexpected visitor who appears on a matter of business. The writer objects especially to agents representing a firm interested in the employment of patent food or proprietary medicine, when they insist on an interview and take up much time. To quote:

"As far as pharmaceutical remedies go, let it be granted that medical men are glad to know the virtues of a new remedy and to make use of it at the earliest opportunity—while in the French aphorism, it still possesses curative powers; the question still remains as to the best method of conveying this knowledge. There can be no doubt that to disturb a man at his vocation and to deliver a discourse upon the subject when that same man is burning to be left alone is not likely to conduce to business. The travelers too often assume an air of omniscience. They talk glibly a jargon which they believe to be scientific and do so with a patronizing manner which conveys the impression that they have not troubled to ascertain whether their victim has any special knowledge of the subject or any chance of utilizing the materials which are dumped down in the consulting room. They appear not to have realized that the Medical Directory might suggest a different tone and that to lecture a man upon his own subject is an idle proceeding. The general practitioner is requested to try the article and order large supplies, on the ground that the consulting practitioners are all deeply interested in the remedy. The consultant is solicited to record his experience and may be surprised to find subsequently his name, with a few remarks separated from their context, appended to the "literature" relating to the new remedy. We can not

believe that such procedures really lead to an increased sale of pharmaceutical products."

Homeopathy.

"The present attitude of the great majority of thinking men toward the question of homeopathy is that its law of cure has not been proved, and that even if it were proved, this would in no sense justify a so-called separate school of practice. The fundamental difficulty is not a simple difference of opinion, but rather the use put to such a difference of opinion by our homeopathic brethren in maintaining a separate school of practice, with separate medical foundations and hospitals and all the appurtenances which go therewith."

An editorial writer (*Bost. Med. and Surg. Jour.*) believes that medicine should offer a solid front to quackery; but this can not be attained as long as a body of well-trained men stand out on a basis of a simple therapeutic principle. The writer insists that the name homeopathy should be dropped. No special enthusiasm, however, is shown in the hope that the "schools" would come together.

The Death Rattle.

"Popular fiction, and especially the stimulating kind written for boys, has familiarized us with the death rattle as an infallible warning of approaching dissolution. We must confess that, in the first year or so of medical practice, we were somewhat surprised to find that there was no such harsh, rattling sound produced in the throat of dying persons, as we had previously imagined. It was an even greater surprise, in fact a distinct disappointment, with increasing experience, to be compelled to admit an inability to distinguish any sound in the throat as necessarily indicating approaching death.

"As we understand the matter, the basis for the belief in a death rattle, is twofold. In many diseases, there is either an actual paralysis or, at least, paresis, of the pharyngeal and faucial muscles or else a functional weakness, which results in a form of snoring. Personally, we have not been able to differentiate this sound from that common during sleep or anesthesia. Secondly, in many other diseases, there is an accumulation of mucus, serous exudate or other fluid in the trachea, larynx and pharynx, so that respiration produces bubbling or finer rales. These two factors may also be combined to produce a death rattle. But, so far as we have been able to observe, neither factor nor both combined are at all characteristic of approaching death, so that

the "death rattle" itself is not a prognostic sign, although, obviously, there are many cases in which from other conditions, we can quite positively prognose impending death and thus, correctly, designate the snore or respiratory bubbling as a death rattle.

"This subject is not without its practical value, especially if the conception of the laity is correct. Even the physician with a large practice does not actually witness the death scene very frequently and, when he does, his attention is likely to be diverted from an accurate study of terminal symptoms. We would, therefore, suggest that members of the profession who have had extensive military experience or who have happened to observe numerous cases of death from accident, especially at one time, or who have given attention to this phenomenon in medical practice, should report their observations. In the first place, it would be a matter of scientific interest to know just what classes of cases are liable to develop a death rattle and what are liable to be free from it and, in the second place, if there is any characteristic which is peculiar to impending death, its exact description and phonographic reproduction would be of value prognostically."—*Medical Times*.

Resistance to Infections.

The New York *Medical Journal*, April 14, 1906, corrects some common errors in our conceptions regarding resistance to infections. To quote:

"The parable of the sower is frequently quoted to illustrate the fact that not all persons acquire every infection. The seeds are sown, but some fall upon stony ground and do not take root. In other words, it is taught that the intrinsic resisting power of the organism is an important factor in preventing infection in spite of the presence of the germs. So prevalent is this conception that it would doubtless arouse a feeling of skepticism, almost of scorn, if we were to suggest that tuberculous disease was the only general infectious disease over which the resisting power of the organism had any well-marked influence. We would ask our readers to refresh their memory as to what the general infections are. Briefly and generally defined, they are diseases in which a parasite causes so severe a reaction as seriously to interfere with the vital functions. This is a vague definition, but it is difficult to be more specific. We may substitute for the word parasite the term micro-organism. We can not substitute the word bacterium, for only a few more than half of the general infections are positively or probably due to bacteria."

The writer reviews our knowledge concerning the infections and finds that outside of the acquired immunity in the exanthemata, typhoid, etc., there is little or no natural resistance. In fact, some diseases, pneumonia, diphtheria, erysipelas and rheumatism seem to cause an increased susceptibility.

Predisposing Causes of Appendicitis.

We are still in the dark as to the predisposing causes of appendicitis. Some pathologists are seeking for anatomical causes, *i.e.*, constrictions, diverticula; others find our modern foods with the habit of eating rapidly as a source of intestinal irritation; still others are looking for chemical causes. The most common chemical ingested, is boric acid, being largely used as a food preservative. An editorial writer in the New York *Medical Journal* discusses this subject of boric acid and the vermiform appendix. To quote:

"Let us now consider what may be the effects of boric acid on the alimentary tract when given in small medicinal doses for, sometimes, a short continuous period. It has been recorded that 14 grains daily will quickly produce pain in the epigastrium and gas in the stomach and intestines, together with colic and diarrhea, or, in other words, act as an irritant of the gastrointestinal tract. Other consequences which have been noted from its use are albuminuria and an erythematous or vesicular eruption, together with the appearance of vesicles in the mouth and on the fauces. Possibly this vesiculation may extend to other parts of the digestive tract. There is no getting away from the fact that boric acid possesses the power of irritating the alimentary canal. This has led us to wonder whether boric acid can directly or indirectly have any part in the production of appendicular inflammation. The various forms of the disease—the simple or catarrhal, stage with plastic peritonitis, the ulcerative condition with local abscess, or the gangrenous and perforated appendix, leading to diffuse septic peritonitis—are but degrees of an affection which lowers the vitality of the tissues and renders them more or less vulnerable to the onslaught of the *Bacillus coli communis*. Under normal intestinal conditions this organism does not seem to be harmful, but, given a suitable change in its surroundings, such as an inflamed mucous membrane, or possibly under stimulation by some change in the intestinal secretions due to antiseptics, it takes on an aggressive, penetrative action."

MEDICAL DIGEST.

DEPARTMENT EDITORS.

Dr. M. A. Bliss, Neurology.	Dr. Adrian Bleyer, Internal Medicine.
Dr. H. N. Chapman, Electrotherapy.	Dr. Carl Fisch, Bacteriology and Pathology.
Dr. W. L. Johnson, Diagnostics.	Dr. M. J. Lippe, Pediatrics.
Dr. Philip Newcomb, Therapeutics.	Dr. J. C. Salter, Physiology.
Dr. C. D. Scott, Dermatology.	Dr. L. M. Warfield, Experimental Medicine.
Dr. O. A. Wall, Jr., Pharmacy and Materia Medica.	

Malta Fever.

Major Woodruff (*American Medicine*, January 6, 1906) says that the number of cases of Malta fever is increasing in this country and are usually treated as rheumatism or malaria; the subject, therefore, merits consideration on the part of the general practitioner. The importation of the disease is possible by other means than infected persons, and a study of its transmission very timely.

The disease has long been known along the shores of the Mediterranean sea, and British sailors have been disabled for months by an attack of Malta fever.

About two years ago a commission was sent out by the British government to study the disease and its mode of transmission. David Bruce, in 1887, first discovered the specific nature of the disease by isolating the causative agent, micrococcus melitensis, but for eighteen years no special advances had been made.

The methods of infection were obscure; how the bacillus obtained entrance to the body was explained in various ways. The water and air were discussed as carriers, but little attention was given to the food. Environment threw no light on the subject. To quote from Major Woodruff's article:

"The commission naturally directed attention to the viability of the micrococcus, and it was found to be most resistant. It survived twenty days in dry sand and as long as seventy-two days in damp soil, and a month or so in fresh or sea water. The first report of the commission was published in the spring of 1905, and seemed to indicate that dust inhalations might be responsible, and certain experiments seemed to point that way. Two independent workers, Ross and Levick, reported that they had experimented upon themselves by inhaling

infected dust and did not contract the disease. At the suggestion of Ronald Ross, they also uncessfully made numerous experiments with *stegomyia* musquitos. They also proved that it was not transmitted by fomites or by direct contact with patients, though it can be contracted by laboratory workers, probably by accidental inoculation. Nor were they able to infect themselves by swallowing infected water."

Even the second report did not throw any light on the source of the infection. In a third report it was mentioned that the micro organism can be obtained from the blood in most cases, but can not be recovered from the skin, sputum, breath, or perspiration, but the urine contained them, as a rule. To quote again:

"The most important discoveries were in relation to goats. It was found that over half of the animals examined gave a positive reaction to agglutination tests, and that one or more apparently healthy animals in every herd were excreting the micrococcus in their milk and urine. Goats which gave a negative agglutination test were fed with the living organisms, and within a few weeks gave a positive reaction and, in course of time, the organisms appeared in the urine and milk in enormous numbers. In one case the milk was still crowded with them nine months after the feeding. Moreover the milk might contain considerable numbers and yet presented no chemic or physical change to arouse suspicion.

"Though some experiments in administering infected food and water have failed, others have succeeded, and it is a fair inference that as goats are proved to be infected in this way, it is the manser of human infection also."

Evidently these goats are immune to the toxic power of the bacillus but harbor them as saprophytes. Goat milk, then, seems to be the principal source of the micro organism by means of which the human host is infected. The question of introducing goats from the southern shores and islands of Europe must necessarily become of great importance for by their importation Malta fever may become common in this country.

Diet in Gastric Ulcer.

The classical dietary measures of gastric ulcer are starvation, then rectal alimentation, and after one or two weeks the gradual resumption of non-irritating food by the stomach.

Not long ago Lenhartz (*Munch. Med. Woch.*) protested against this starvation plan. He claimed that the consequent emaciation and anemia affected the ulcer unfavorably, and that more rapid cures could be obtained by a more liberal diet. He recommends eggs in gradually-increasing numbers, beginning with two or three daily. After one week scraped meat is added to the diet.

Recently Senator (*Deutsche Med. Woch.*, January 18, 1906) discusses this subject. To quote from his article:

"The diet for ulcer of the stomach must have certain characteristics: It must not burden the stomach from its volume or weight; it must not be irritating or induce hemorrhages; it must neutralize the hyperacidity and, finally, it must be easily digested and highly nutritious. A diet which fulfills these requirements and, furthermore, does not incite hemorrhage but on the contrary has a hemostatic action can be made from three articles of food - gelatin, fat and sugar."

The author refers to the nutritive value of gelatin and also its well-known favorable action in hemorrhage; it is by far the best proteid to select in these cases. Sugar and fat furnish heat and energy, and also inhibit the secretion of gastric juice. The gelatin can be prepared in many ways, sweetened and flavored. Pig's feet gelatin or chicken jelly may be used. The fat is best given in the form of butter and cream. The results of this diet have been very gratifying.

Typhoid Fever.

A very helpful suggestion which should be remembered in connection with the diet is made by Todd (*Med. Record*, April 14, 1906), who declares:

"That the lymphatic system should receive the earliest attention in this disease. The outcome of the illness depends upon the phagocytic activity. If a proper amount of fluids and alkaline salts is given in the early stage of the disease, they will prove of advantage. However, if they are withheld, the efforts of the protective forces of the body are hampered. The germicidal powers of the blood are preserved by saline beverages. One authority states that they act upon the albuminates of the serum; another investigator has demonstrated that they increase the alkalinity of the blood, and in that measure the activity of the white corpuscles. The action of the bacteria and the toxins in febrile disease increases heat production to a greater extent

than dissipation, and the temperature rises. The demand for water is augmented as a result of increased respiration and metabolism throughout the system. If it is not given in abundance, heat dissipation is lessened. The writer believes that the stomach is the physiologic organ fitted to absorb fluids according to the wants of the system. He administers a saline beverage, consisting of 8 ounces of water, 10 grains of sodium chlorid, 5 grains of potassium bicarbonate and 1 teaspoonful of lemon juice, which produces a mild effervescence. There is about $2/3$ grain of free citric acid in each dose. The absolute need of the system for water need not be emphasized."

Curability of Tuberculosis.

It is a mistake to drop drugs entirely in the treatment of tuberculosis. There are few cases which may not be helped by proper medication. The disease may often be controlled indefinitely and even where all proper hygienic surroundings can not be procured often much can be done. We quote from the *Medical Record* of March 17, 1906:

"Henry F. Langhorst reports several cases of tuberculosis that have come under his care with favorable results, and hopes that they may tend to dispel the gloom that dominates the prognosis of the disease. He states that the sputum was not examined for bacilli, and that tuberculin was not used as a diagnostic aid, but since these aids are often uncertain, the possibility of making a diagnosis on the symptom group associated with the physical signs seems reasonable. In one case the treatment consisted of outdoor life all the day, a well-ventilated room during the night, creosote carbonate, from 3 to 8 drops in milk after each meal; Dover's powder and chalk mixture for diarrhea, and calcium hypophosphite in 2 grain doses. Lime water was added to the milk, and small doses of nux vomica, and hydrastis were also given. Proper therapeutic and hygienic modalities now directed against the enemy will soon reinforce Nature as to make the conquest an easy one."

Reflex Disturbances.

Sometimes we appear to have lost all conceptions concerning reflex action as regards pathologic processes; for it has not been many years since one half of all chronic ailments were explained on the theory of reflex disturbance. We quote from the *New York Medical Journal*:

"The *Jour. de Med. Interne* for March 1, 1906, is responsible for the following anecdote, which bears the stamp of the truth: 'I have a miserable stomach,' said a confrere to me. 'As soon as I eat anything but beefsteak and drink anything but water, I yawn, I feel heavy and I suffer with oppression. All my nerves are like the strings of a violin, which everything causes to vibrate. I am bored and I bore everybody extremely.' Two years later, the sufferer was again encountered. This time he was at a fashionable restaurant, with a napkin tucked under his chin, calm, and with a flower in his buttonhole, eating heartily and drinking wine of rare vintage. It was a miracle. He explained his transformation as follows: 'I had an anal fistula, and the doctor forcibly dilated it for me. Is it a coincidence? Since then I find the sky more blue, my mother in law more tolerable and you can see I enjoy with each meal a glass of good wine.' The editorial comment seems to make satisfactory reply to the query as to the coincidence, for it states that the writer has seen two other cases in which a mucomembranous ileocolitis was suddenly cured by anal dilatation. Amaurosis was at one time defined as a condition in which both the patient and the physician were blind. There are conditions doubtless in which each of them must put on spectacles. It is important to therapeutic results that the glasses be worn by those who really need them."

Diet in Typhoid Fever.

There is a distinct tendency among practitioners to depart from the time-honored custom of giving milk exclusively in typhoid fever. That this has been overdone can not be doubted. In the first place, during the hot weather the milk swarms with bacteria and it is a common accident to cause acute intestinal indigestion. The milk must often be discontinued on account of indigestion. Yet, in our experience, patients who digest milk well show a better resisting power to the disease and waste much less than those fed on cereal decoctions and broths.

We give an abstract of a recent article by Clayton, in the *Medical Record*, March 17, 1906, who states:

"That it has not been proved experimentally that the digestive and absorptive powers during typhoid fever fall off only 5 to 10 per cent, so that impaired digestion is not sufficient argument in favor of the exclusive milk diet. The present trend of thought is toward the belief that the majority of diseases being due to specific poisons, recovery depends upon either the exhaustion of that poison or the de-

velopment of an antibody of some sort which renders it innocuous. In order that we may withstand the ravages of the disease until the time of recovery, it is necessary to keep the patient in the best possible condition. The writer emphasizes the following points in the selection of a diet for typhoid fever patients: It must be highly nutritious, easily digested, innocuous and palatable. It must be sufficiently nutritious to maintain as far as possible the bodily equilibrium. The writer's treatment of a case of typhoid fever, no matter what day of the disease it may come under his care, is as follows:

"The regulation 6 ounces of milk are given every two hours, day and night, while the patient is awake. In place of milk, in order to vary the monotony for those who can take milk, and as a substitute for those who can not, animal broths are given. After the subsidence of the more acute symptoms, the patient is asked if he is hungry, and if he replies in the affirmative a soft boiled or poached egg is allowed, and if well borne the number is gradually increased to three or more a day. Jelly or blancmange, custard, soft toast, the soft part of a baked apple, and rice which has been boiled four hours, are the next additions. After this, scraped beef or chop, very finely divided chicken and baked potato are tried.

"The writer does not advocate so full a diet in every case, for each patient must be carefully studied as an individual. He believes that most of the foods mentioned are quite as digestible, far more palatable, and rather less likely to cause perforation or hemorrhage by their local action, or gas production, than milk.

"The writer appends a table of 26 cases; these patients all recovered. He adds that the advocates of the more liberal diet claim that the patient is more comfortable, the attack is slightly shortened, convalescence is more prompt, and relapse, hemorrhage and perforation are not more frequent."

Treatment of Heart Failure in Diphtheria.

No one who has had actual experience with threatened heart failure during or following an attack of diphtheria will deny that this is one of the most formidable tasks which the clinician may undertake. One difficulty is that there is no unanimity among clinicians as to effective therapeutic agents. Not long since, repeated injections of diphtheria antitoxin were recommended; while there can be no doubt that full doses of antitoxin are the best prophylactic means, for the actual emergency, more prompt agents must be sought.

Bolton (*Lancet*) in a recent article gives rest in bed the first place in treatment. In regard to drugs used, he writes:

"The employment of the digitalis group of drugs is thus contraindicated in the early stages of diphtheria when the pulse is slow. Strychnin, which has been employed, is also contraindicated at this stage because it acts upon the nervous system, slows the heart by vagus inhibition, and raises the blood pressure by vasomotor constriction. Practically, I have never known a case to be saved by the use of these drugs and I have known of no statistics proving that the mortality of the disease is lowered by their employment. The objection does not hold in the case of the cardiac stimulants which are considered to increase reflexly the force and frequency of the pulse and some of which cause vaso dilatation. Alcohol, ether, and camphor are examples of such drugs, but it is extremely doubtful if their employment is of any value whatever in the early stages of diphtheria. It is becoming more and more recognized that the action of alcohol on the heart is in the direction of lessened efficiency. If the patient has received a fatal dose of toxin, antitoxin if given early will save him by preventing cardiac degeneration, but no amount of cardiac stimulation will do any good whatever if antitoxin fails. Cardiac stimulants are, therefore, chiefly of use in the later stages of the disease when the weakened heart gives way before some strain, leading to a gradual failure or sudden syncope. A paralyzed patient at a late stage of the disease, who is cold and almost pulseless as the result of vomiting may be benefited by cardiac stimulation, but such a condition in the first fortnight of the disease leads inevitably to a fatal termination in my experience. I have found the application of heat and counter irritation to the precordium to be valuable adjuncts to the cardiac stimulation in the later stage of the disease.

"In conclusion, I should like to mention a drug which has not yet received a fair trial in the treatment of heart failure in diphtheria. This drug is belladonna. Of course, it is a very difficult matter to test the efficacy of a drug in such a condition as that the treatment of which we are discussing."

Determination of the Absence of Hydrochloric Acid by a Simple Stool Examination.

"Alfred F. Hess has found that by making use of the fact that connective tissue can be digested only by the gastric juice the lack of secretion of hydrochloric acid by the stomach can be determined by naked-eye inspection of the stools. The patient during three days is given a test diet, of which the chief requirement is that it shall contain one-fourth of a pound of chopped beef cooked so that it is still rare within. On carefully scrutinizing the finely divided stool under these conditions, if there is absence of hydrochloric acid secretion

particles of undigested connective tissue will be recognizable. The author recommends the method for application in cases in which the passage of the stomach tube would be inadvisable."—*Medical Record*.

Harmfulness of Warm, Moist Inhalations in Tuberculous Laryngitis.

"Many years ago, on fanciful etiologic and therapeutic grounds, Krull advocated the use of inhalations of the vapor of hot water (so-called steam inhalations) in the treatment of tuberculous laryngitis. The treatment was found to be harmful and was abandoned—apparently for good. Recently, however, there seems to have been a revival of this ill-advised practice. The well-attested usefulness in acute catarrhal laryngitis of inhalations of warm water vapor, medicated with compound tincture of benzoin and paregoric, as advised by J. Solis-Cohen, seems to have misled a number of physicians into expecting equally good results in a totally different condition, only superficially resembling acute laryngitis. In nonulcerative tuberculous laryngitis—and nobody seems to have been sufficiently thoughtless to advise the use of steam in ulcerative conditions—as in acute catarrhal laryngitis, there are, it is true, hoarseness and pain, and the laryngoscope reveals more or less thickening and redness. But the underlying pathologic conditions are essentially different. Acute catarrhal laryngitis is the result of an irritative cause that has passed away; tuberculous laryngitis is the chronic result of a continuous cause. By its soothing and relaxing effects the warm, moist inhalation favors the subsidence of the acute inflammation, and the absorption of any effused products. But laxation in the chronically inflamed tissues of a tuberculous larynx favors the spread of the morbid process. Soothing applications are indeed useful, but these are to be sought in such agents as suprarenalin, menthol, orthoform, ethyliodid, anesthesin, iodoform, even cocain as a last resort, if need be—not in moist heat. Dry heat is said to be useful, and is not known to be harmful. Mild astringent applications by spray or topically, as zinc sulfocarbolate solution, 1 per cent, glycerol of tannin, cupric sulfate, 1 per cent—and mild sorbefacient and disinfectant applications, as iodine and carbolic acid in glycerin, iodine 1 to 3 parts, potassium iodide 1.5 to 5 parts, glycerin 500 parts, or silver vitellin, 5 to 25 per cent solution, are also of service. In some cases chromic acid, 1 to 10 per cent solution, in some cases lactic acid 5 to 80 per cent solution, in some cases guaiacol 10 to 25 per cent in olive oil, with perhaps the addition of menthol 5 to 10 per cent, even in some cases of tissue thickening, formaldehyde water 1 to 10 per cent of the commercial 40 per cent solutions, may be applied. In still other cases insufflation of powders is better. The parts are to be

cleansed with a spray of solution of hydrogen dioxid, followed by some mild alkaline solution, and then agents such as finely pulverized calomel, boric acid, suprarenal extract, morphin, iodoform, orthoform, and tannin may be blown in. A single drug, or a mixture of two or more may be used, according to indications. Ulcers demand special treatment. But the main purpose of this note is not so much to point out the many ways at command for the relief of the symptoms of tuberculous laryngitis, as to sound a warning against a harmful practice, unaccountably revived after half century of merciful desuetude, and to the injury of many sufferers."—*American Medicine*.

Secretin.

Parvlow originated the theory that the presence of hydrochloric acid in the duodenum reflexly excites the activity of the pancreatic juice. Bayliss and Starling a few years ago, while admitting the influence of the acid demonstrated very clearly that the acid excites an internal secretion of the glandular cells of the duodenum. This they called secretin and it is absorbed by the blood and its presence there excites the pancreatic secretion.

The title mentioned was the subject of the second of the Croonian Lectures delivered by Starling (*Lancet*, August 12, 1905), an abstract of which appeared in the *Medical News*, from which we quote:

"After referring to the digestive mechanism of the lower animals he traces briefly the physiological experiments from which the theory that digestion was accomplished purely by nervous reflexes was deduced. Since physiologists failed to obtain invariable results from nerve stimulation the work was pursued further, and it was found that the introduction of acid into the duodenum evoked a reflex flow of pancreatic juice, even after division of the vagi and splanchnics or complete destruction of the spinal cord. This was first considered to be a peripheral reflex, but by further experimentation it was demonstrated to be absolutely independent of any nervous channels whatsoever, and was in reality a chemical reflex. The entry of acid into the duodenum causes the production in the mucous membrane of a chemical substance called pancreatic secretin. This is rapidly absorbed into the blood and travels to the gland, the cells of which it excites to secrete. When obtained from one animal and injected into another it will cause a secretion of pancreatic juice. Secretin is a substance of the same general distribution as adrenalin, is unaltered by boiling, soluble in alcohol and more or less diffusible. It is suggested that the

formation of secretin by acid is a hydrolytic process acting on a pro-secretin substance to be found in the epithelium of the upper small intestines, but this body has not been isolated."

The chemical mechanism of gastric secretion likewise has been investigated by Edkins (Proc. Roy. Soc., 1905) and his discovery may upset some of our physiological ideas concerning the stomach. To quote again from the same:

"The author sought to investigate the possibility of the existence of a similar form of chemical regulation in the case of the gastric secretion. With this in view he made extracts of the mucous membrane of different portions of the stomach and injected them into the jugular vein of the dog. The extracts were made with solutions of dextrin. He found that the mucous membrane in the pyloric region only contains a substance which when thus injected excites the flow of gastric juice."

Toxic Deliria.

Alcohol is by far the most common exogenous poison which may induce delirium. That there are other poisons which when ingested in excessive quantities for a long time may also produce delirium is asserted by Kirby (*Medical News*, October 14, 1905) To quote:

"In the service of the Pathological Institute on Ward's Island a variety of such cases had been met with. These had included intoxications from the use of morphin, cocain, the bromid salts, chloral, phenacetin, bromo seltzer, and also from the excessive use of tea and coffee. Dr. Kirby then reported in detail three cases of toxic deliria. The first of these was due to the excessive and continuous use of phenacetin; the second to the use of chloral taken after alcoholic excesses, and the third to the use of bromids for the relief of insomnia. These cases all had certain symptoms in common. The patients were not clear as to their surroundings; they apprehended readily what was said to them, and were able to grasp, more or less, the simple relations which came under their own eyes, but they invariably mistook the situation in which they were placed. They were especially confused over the identity of persons, while time orientation suffered comparatively little. Consciousness regarding their own personality remained intact, and, with one exception, the patient's grasp on the remote past was clear. Perhaps the most striking symptom was the tendency to produce spontaneously detailed accounts of extraordinary occurrences, dream like in character, and mostly of a terrifying and fearful content.

Especially noteworthy was the fact that motor agitation and fear reactions might be entirely absent. Improvement in all the cases was gradual, and the belief in the delirious experiences remained some time after the patients were otherwise clear. The condition had to be differentiated from 1, delirium tremens; 2, general paralysis; 3, Korsakoff's psychosis; 4, the great variety of symptom types in the infective-exhaustive group of psychoses.

SURGICAL DIGEST.

DEPARTMENT EDITORS.

Dr. E. A. Babler, Surgery. Dr. Geo. Gellhorn, Obstetrics and Gynecology.
Dr. M. G. Gorin, General Surgery. Dr. Phil Hoffman, Orthopedic Surgery.
Dr. W. A. Shoemaker, Ophthalmology. Dr. H. J. Scherck, Genitourinary Surgery.
Dr. Selden Spencer, Otology. Dr. J. A. J. James, Rhinology and Laryngology.

Radical Removal of Cancer of the Stomach.

Drs. W. J. Mayo and C. H. Mayo presented some definite facts in a paper read before the New York State Medical Association. The main points were that cancer of the stomach is a strictly surgical disease and all diagnostic means we possess can only give us strong suspicions—nothing but an exploratory operation can decide positively. The following is an abstract of their paper:

"There is no truthfully recorded example of a cancer of the stomach cured by medical means, yet these cases are treated by medical men, are sent into the medical wards and subjected to treatment which must result in 100 per cent mortality. Cancer of the stomach is the most frequent form found in the human body, at least 30 per cent of the total, a tremendous sacrifice of human life almost without effort at cure.

"The past high mortality of radical excision and the difficulty of early diagnosis are largely to blame for this state of affairs. Since 1900, great improvement in technic has lowered the mortality to less than 10 per cent and exploratory incision in the suspicious cases gives the diagnosis.

"Report of 81 gastric resections with mortality of 14.5 per cent, including early operations; 34 patients operated upon in the last thirty months with a mortality of 8 per cent; 25 consecutive with 1 death, 4 per cent. As to relief, 11 operated upon too recently to be of value as to cure. Five failed to live six months, 38 lived six months to a

year and 24 are alive now; 21 from one to two years and 13 alive; 10 from two to three years and 8 alive; 4 from three to four years and 3 alive; as only 16 were operated upon more than three years ago this gives 25 per cent living three years. One is alive and well after four years and ten months.

"Clinical history and symptoms of most value in early diagnosis. Traces of blood and reduction of hydrochloric acid of some importance. History of past ulcer is not against later diagnosis of cancer, as ulcer often degenerates into cancer. Twenty-five per cent of our last 24 cases show this. The presence of a tumor is not necessarily a contraindication to operation. A small, movable growth in the pyloric end is a rather favorable type, as it gives early obstruction. Seventy per cent are in the operable (pyloric) end of the stomach.

"All known means of diagnosis merely give rise to a suspicion, and if we can not disprove it, exploratory incision is called for."

Anal Fissure.

All complicated cases of anal fissure require an operation. Even simple cases which do not readily yield to palliative treatment the same procedure is advised by Hill (Boston *Medical and Surgical Journal*, July 13, 1905). The usual operative procedures are stretching of the sphincters under general anesthesia or division of the external sphincter under local anesthesia. He insists that all cases promptly heal by a simple complete division of the external sphincter.

He gives his technic as follows:

"Having previously prepared the patient so as to secure a clean operative field by the administration of a cathartic, the anal region about the fissure and pile was slowly infiltrated with a 1 per cent solution of eucaine. Then, with the left index finger in the anal orifice, the external sphincter was divided in the right posterior quadrant by a careful dissection with a scalpel, while an assistant sponged the line of incision so that I was aware when the deepest fibers of the muscles had been severed. (Two things are important to bear in mind in this procedure: Divide the muscle squarely across at right angles, and do not injure the internal sphincter). The exuberant granulations were curetted away and the pile removed with curved scissors. The wound was firmly packed with a strip of sterilized gauze, a pad placed over the anus and held in place with a T bandage. The bowels were confined and the patient kept in bed for forty-eight hours. The external anal pad was changed twice daily, but the packing in the incision was allowed to remain until the bowels moved on the second day.

After this the patient was up and about attending to her household duties. The wound resulting from the division was very lightly packed every twenty-four hours for the next five days. As is the rule in these cases, very little pain or other disagreeable symptoms followed the operation."

Cancer of the Head and Neck.

This subject was discussed at the last meeting of the Pennsylvania State Medical Association. Dr. Crile analyzed 110 operative cases. To quote from an abstract of his paper (*Medical News*):

"From an extended search of the literature, he concludes that cancer emboli are infrequent. In taking up his work he lays great stress upon the importance of complete operation. If this procedure is not done thoroughly, it stimulates the growth and shortens life. In doing the radical operation, he advocates the removal of the lymph nodes, *en bloc*, he avoids handling the carcinomatous tissue, and retracts on sound tissue and never on the diseased. In doing operation on the larynx for carcinoma he advises a preliminary tracheotomy. Tongue operations had better be done in two stages. In such procedures Dr. Crile introduces a rubber tube through each nostril to a point opposite the epiglottis and then packs the throat with gauze to prevent the blood from running in the larynx, and to avoid inspiration pneumonia. By this apparatus he can get the etherizer out of the field of operation. He notes that it is well to cocaine the pharynx before introducing the rubber tubes. Hemorrhage is best controlled by temporary ligation of either the external or the common carotid, but even with the external carotid ligated he has seen severe pulsating hemorrhage, which he believed came from the opposite side of the body. Permanent ligation of the common carotid is not looked upon favorably because of the brain softening which results. A partial upright position of the patient assists in controlling the hemorrhage. Prevention of hemorrhage and laceration of the tissue avoid to a certain extent collapse. When his wound is large the exposed parts are covered with warm compresses. Dr. Crile divides the cases upon which he operated into two groups. In the first series are those in which the lymph nodes were not removed, the carcinomatous tissue was handled; the results were unfavorable. In the second series there were four times as many cases cured as in the first series. Forty six of the cases of the second series have been operated upon three years and there is no recurrence. In this series the mortality was 10 per cent, but this includes some of the cases of the first group. He concludes that every case of carcinoma is curable at one time, and advises in every patient suffering with cancer of the head or neck, a radical operation."

Serious Puerperal Anemia.

Pernicious anemia forms one of the contraindications to pregnancy, so to speak; the occurrence of pregnancy during this disease adds markedly to the gravity of the situation; hence, the induction of premature labor is usually indicated. Other grave forms of anemia, as chlorosis, are at times very much aggravated by pregnancy. Secondary anemias are frequently increased, especially during the first few months of pregnancy before the organism of the mother has an opportunity of adjusting itself to the new demands. In fact, the mistake has often been made of suspecting some malignant disease for pregnancy, on account of the rapidly forming anemia. A recent contribution to this subject is by Clivio (*Ann. di Obstet. e Gin.; Am. Jour. Obstet.*), who details his observations made on twenty five cases of grave anemia in the puerperal state seen by him in the Maternity Hospital at Parma:

"The amount of iron in the blood of these patients has been carefully studied, as well as in normal individuals. The cases considered were not affected by ordinary degrees of anemia, but by pernicious and chloranemia. They were taken from a region where anemia is frequent; at the same time they were of a more severe form than is found in men, or in women who are not pregnant, and several of the cases were so far advanced that it was impossible to make them respond to any treatment, and a fatal issue resulted. The author believes that the condition of pregnancy, with the additional demands on the system made by the necessity of nourishing the child, as well as the poisonous products that arise from the nutrition of the fetus, rendered it impossible for the mother to survive the ordeal. In many of the cases the gastrointestinal troubles were severe, and obstinate vomiting and diarrhea contributed to the fatal anemia. When labor was completed naturally the anemia began at once to be relieved, and at so rapid a rate that it was impossible not to believe that the continuance of pregnancy aggravated the condition. This amelioration was in spite of the drain of lactation and the lochia. One of the causes of the anemia the author believes to be the bearing of many children, as most of the cases were in multiparæ. Another was the long lactation that is the custom in that region. The fatal results were due to gastrointestinal insufficiency, and there was true atrophy of the stomach and intestine. The patients were noted to have small power to resist the ordinary processes of fermentation. They had rise of temperature, also. The lochia became fetid, and the condition of anemia was aggravated by the local changes. There was an increase in size

of the spleen, especially in the severe cases. The treatment of the cases was both medical and obstetrical; the induction of premature labor became necessary in many, to save the life of the mother, and this was justified by the immediate improvement in the patient's condition after the uterus was empty. The author concludes thus:

"1. Pregnancy has a marked influence on anemia when of some degree of severity, and simple anemia is changed to the pernicious form. This is due to the placental changes, and is marked in the last three months of gestation.

"2. The resistance of the organism to putrefactive changes is much lessened, and there is marked destruction of the red blood corpuscles, as is shown by the enlargement of the spleen.

"3. Treatment should be both medical and obstetrical.

"4. Labor is easy and rapid.

"5. Use of bone marrow is of real advantage."

The Management of Acute Suppurative Otitis Media.

Louis A. Nelsen, St. Paul, Minn., (*St. Paul Medical Journal*, January, 1906). This valuable article is prefaced with a reference to the importance of the subject under discussion. The lack of proper consideration to it is deplored. The author touches on the dangers which may ensue from neglect of this affection and says that chronic suppurative otitis media, the commonest result of such neglect, might in almost all cases be avoided if proper attention were given to the acute affection. He says: "That many cases dry up with no treatment whatever is a fact, and it is this class of cases that has lulled the public, and many physicians, into the belief that no interference is necessary. But the fact that a minority of cases have this fortunate ending is no good argument for pursuing a course of non-intervention in the majority."

After mentioning the dangers of neglect the author takes up the discussion of proper treatment. Primarily essential, he says, is a knowledge of the appearance of the ear in the various stages of suppuration. "No treatment should be undertaken without an otoscopic examination. He divides the treatment under two heads. Pre-perforative and post perforative. Of the first stage he says that the inspection will determine whether or not the appearance indicates the necessity of a paracentesis. If not he advises hot compresses, dry heat preferred, as moisture in the canal tends to macerate the epithelium and favors suppuration. When moist heat is used because it may

better relieve the pain, the canal should be thoroughly dried following this procedure. "The instillation of the various oleaginous household remedies can not be too strongly condemned." Further he says that increasing the air pressure in the tympanum often gives relief. Politization should be carefully and gently performed. He also advises in this stage repeated small doses of calomel, rest, light diet and treatment of naso-pharyngeal disorders. Opiates should rarely if ever be given. If resolution fails and symptoms become more violent paracentesis is advised, the membrane should not rupture spontaneously. He then discusses the technic of paracentesis and uselessness of local anesthesia.

Of the treatment in the postperforative stage the wick method is advocated. The ear is douched with a warm boric acid or bichlorid solution and then dried carefully and a gauze drain is placed in the canal as far as the perforation. The reason this treatment has fallen into disfavor in some hands is because the gauze was used as a tampon instead of a drain. "Gauze drainage is not always efficient. At times the discharge is so profuse and fluid in character as to carry it into the auricle, or it may be so stringy, and tenaceous that capillary attraction is impossible." The author advocates Politization after the third day or so and believes that little or no danger is incurred by this method if not too violently performed. He abrogates the use of frequent syringing, especially in the hands of the patient or members of his family with consequent risk of infection. Packing the meatus with boric acid powder is condemned. Finally the necessity of enlarging the perforation in certain cases is mentioned; and in conclusion the necessity of watching the hearing and performing Politization at intervals until deafness diminishes is referred to. The real value of this paper is well stated in the conclusion of it. I believe that this subject can not be too much harped on even where the methods given are not new. The author concludes as follows: "In conclusion, I wish to state that the subject of this paper was chosen for its interest to the general practitioner, who usually sees these cases first, as well as to the specialist. I realize also that few thoughts advanced here are new, but it was written with the hope of stimulating the physician to consider less lightly than in the past, a disease apparently simple, but which is most pregnant with disastrous consequences when neglected or carelessly treated."

YESTERDAY AND TODAY.

DEPARTMENT EDITORS.

Dr. E. A. Babler, Surgery.

Dr. Adrian Bleyer, Medicine.

Light and Smallpox.

In view of the work of recent years on the effect of light on the evolution of smallpox the following written by Barlow (*Lancet*, 1871) is interesting:

"Since the publication of a paper by Dr. Black, of Chesterfield, in the *Lancet* of 1867, upon "A Mode of Preventing the Pitting in Smallpox," I have habitually followed the plan therein advocated of excluding the light and administering arsenic; and, until very recently, I have believed this to be the best mode of treating all varieties of this formidable disease. There can be no doubt (and the testimony of all who have followed out this plan will, I think, be unanimous upon this point) that the exclusion of light exerts a retarding influence upon the progress of the pustules in their later stages, so that, instead of acuminating in the usual way, they shrink and shrivel about the sixth or seventh day of the eruption. The effect of this retardation is, in most cases, to prevent that amount of pitting and destruction which is due to the changes brought about in the subjacent tissues by their later progress. That much of this pitting is really due to the effects of the stimulus of light, or, at least, of some of the rays, seems pretty well shown by an experiment, where part of the face of a smallpox patient was covered with a warm solution of colored gelatin (to exclude the actinic rays), the rest of the features being left exposed to the full action of the light, with the result of showing a marked contrast between the two portions. This result also agrees with our knowledge of the effects of light upon the growth and circulation in both animal and vegetable structures. The much ridiculed red curtains, within which John of Daddesden inclosed his royal patient, were, therefore, not without their excuse; nor, on the other hand, were his successors wrong in rejecting them. Free ventilation is an essential in the treatment of smallpox, and it is in no way incompatible with the entire exclusion of light. The use of arsenic I do not think of very great importance. I have treated cases without any drug other than the acetate of ammonia, and they have done quite as well as those who have taken the arsenic; and during the past four years I have not had one patient badly marked, or left with any injury to the eyes. These cases have been numerous, and have included many unmodified and

several confluent; and until just recently I have hailed a case of smallpox with pleasure, so sure have I felt of securing a satisfactory result. But during this present epidemic I have lost four cases of confluent smallpox under circumstances which have raised in my mind certain doubts as to the advisability of this plan of treatment in all cases; for, whether it be from the greater activity of the *materies morbi*, or merely from its greater abundance, this, like zymotic diseases, seems most virulent during the height of its epidemic period, and the unmodified cases are mostly confluent and very severe. Now so great is the effect of the exclusion of light upon the maturation of the pustules, and so rapid in these four cases was the sinking and death, just at the period when the pustules would under the stimulus of light have acuminated and ripened, that I have been led to believe that there might exist between them the relation of cause and effect, and that the patients have sunk overpowered by the virulence of the poison, which has, by the abstraction of the accustomed stimulus, been prevented from taking its natural course to the skin, in the same way as death may occur from the suppression of the exanthem of scarlatina or measles."

The Treatment of Femoral Hernia.

It is not at all surprising that up to the middle of the Seventeenth Century the treatment of femoral hernia was palliative. Verheyn was the first surgical writer to accurately describe this affection. In 1780 Manning wrote:

"When the hernia can not be reduced by the hand only, recourse must be had to chirurgical operation. Upon the whole Mr. Potts is of opinion, that as the operation must be attended with a good deal of trouble, and some risk, it is better to avoid the necessity, which he thinks may almost always be done, considering the large space between the os ilium, and the os pubis, and that the space is occupied by cellular membrane, and fat, or if the division of the ligament be unavoidable, let the operator be particularly careful to keep the extremity of the probe-pointed knife within the end of his forefinger, held up tight just behind the edge or border of the tendon, and to make as small an incision as may be necessary. The probe-scissors, the common instrument in use for this operation Mr. Potts declares to be in this case particularly hazardous and improper."

How thankful we should be that we live in the day of herniotomy. How different and how satisfactory is the treatment of femoral hernia today! The common truss as well as all other palliative and unscientific measures are fast passing into oblivion. The technic employed

will depend upon the training and experience of the attending surgeon. In 1879 Socin reported six cures by simply tying off the sac and then sewing up the skin. Bassini holds that the radical operation should endeavor to bring the relaxed fascia latae and Poupart's ligament again into their normal position. After exposing the sac, Bassini isolates it; opens the latter, then reduces the hernia, after which the sac is transfixed, tied off both ways and the stump dropped back into the abdomen. The canal itself is closed by six or seven sutures from within outward. These include the periosteum of the pubes, the pectineal fascia, and Poupart's ligament. The last stitch lies close to the saphenous vein and between this and the crural vein a space of about 1 cm. is left so as to avoid constricting this vessel. All stitches are placed before any are tied.

Very recently DeGarmo has reported 110 cases treated successfully as follows: The skin opening is made parallel to the inner side of the femoral vessels; the sac is secured and thoroughly evacuated and materially lengthened in order that when ligated the stump will retract within the abdominal cavity; Poupart's ligament is then sutured to the periosteum of the pubic bone by means of kangaroo tendon.

(In, passing I want to emphasize the dangers of reducing a strangulated hernia *en masse*. Taxis is always a *dangerous* practice).

Ganglion.

About a century ago, in discussing the subject, Sir Chas. Bell said:

"Ganglion are distinct from diseased bursæ; they arise from a sprain or some slight injury to the theca or sheath of the tendon of the hand or foot. In substance they resemble the structure from which they arise. They are firm and dense sacs, having a fluid soft and viscid, and not unlike synovia. In some instances a double bag may be seen on dissection, a firmer inner membrane with a tendinous sac. At first you should leech and foment; afterward, when they are more conformed, you may apply blisters and stimulating plasters, with compression; finally, they may be punctured, and their contents pressed out into the cellular substance, where it will be rapidly absorbed. Bursting these by a blow is an uncertain and an awkward proceeding. When these sacs form with some modification of structure on the foot, they are for the most part consequent on continued pressure and friction. They are called bunions."

The studies of Gosselin and of Teichmann tended to show that ganglia were small cysts usually found about the wrist containing a gelatinous substance and covered with a dense fibrous sheath as diverticula of the synovialis of the joint, the pedicle of which communicating with the joint having become obliterated by adhesive inflammation. Riedel and Ledderhose have proven that ganglion is a "cystoma," resulting from colloid degeneration of the connective tissue. Ganglion can be produced only within the substance of the joint capsule. König maintains that the ganglia "are related to the capsule."

Today the treatment of ganglion is still variable. Many surgeons advise incision and packing; others favor incision and pressure; a few cling to bursting. Very recently Cates said:

"A safe, efficient and non-toxic treatment of ganglion is that of injecting fifteen to twenty drops of equal parts of crystalized carbolic acid and gum camphor. The syringe is thrust into the center of the ganglion. But a single injection is required. As there is some reactionary swelling it is best to wear a splint for a few days in case of the upper extremity and to lie in bed quietly for a few days with the limb elevated, in case of the lower extremity."

Hofmeister states that the most certain method and the one most used at the present time is extirpation. This requires careful asepsis. It is easily accomplished; if large openings are made into the joint, they are closed with buried silk sutures. In passing, it may be well to add that it seems me (Babler) that catgut will be found more satisfactory than silk. It is probable that puncture, scarification and pressure will usually be tried before extirpation will be resorted to.

Septicemia.

The renowned surgeon, James Paget, relates in an interesting manner (London *Lancet*, 1871) his own experience with an attack of septic infection due to dissection poisons. It is interesting to compare his ideas with the knowledge of today.

Mr. Paget was infected in making demonstrations on the dead body of a patient who died of acute cellulitis of the pelvis and pleurisy following a lithotomy. He had no wound of the skin, and believed he was infected from the pleuritic fluid in which his hands were long soaked.

He insists that a wound is not essential to the absorption of the poison. Very interesting is his discourse on immunity in connection with dissecting poisons. He had been perfectly immune for many years, since when demonstrator of anatomy he handled dead bodies constantly. [It is strange that he believed the poison of a sick man to be especially virulent immediately after death. We now know that old bodies, especially when embalmed, are comparatively safe in handling. Every dead body is not poisonous—only those which have died of some septic disease are especially dangerous].

Mr. Paget's immunity was broken down by great fatigue and cold. The disease appeared first as small pustules on the hands. Pain in the axillary glands followed but no lymph vessels were inflamed in the arm. Cellulitis of the axilla, back and neck followed, which terminated in suppuration. Fever, chills, and great prostration were the general symptoms. The abscesses were opened and a month after the infection erysipelas developed; beginning near the wound in the neck, it spread over half the body. Pneumonia also complicated the disease.

He attributed to quinin, which was given in 4 grain doses three times a day, the leading part of the treatment. He did not regard the pneumonia as having anything to do with blood-poisoning.

Acute Articular Rheumatism.

We have noticed a disposition lately to disregard the possibility of rheumatism involving the muscles. In fact, some practitioners are willing to admit that there is a specific disease—acute articular rheumatism having clearly-defined symptoms, other pains are placed in the obscure categories of myalgia, arthritis deformans, etc.

It is well, therefore, to recall the history of a case reported by James Tyson:

"I was called, May 28, to see Nellie S., aged 8 years, whom I found with high fever and complaining of a sharp pain in the precordium, accompanied also by oppression which suggested pericarditis. A careful examination of the heart and lungs showed neither to be involved, and I concluded that the pain was muscular. In forty-eight hours it had yielded to simple counter-irritation by mustard and an aconite fever mixture. But at my visit thirty-six hours after I was

first called she complained of a little abdominal pain. As stated, the next morning the chest was quite free of pain, but the abdominal pain had increased. There was also sharp pain in the lumbar region radiating to that of the bladder, which, indeed, was the focus of greatest pain. The urine was very concentrated, highly-colored, and acid in reaction. She had previously had a similar attack, with highly-colored, scalding urine, with painful micturition, under the care of another physician. These facts inclined me to believe that she was suffering with nephritic colic. Hourly doses of paregoric and an alkaline diuretic mixture during the day failed to give her relief by evening. The anodyne and alkaline mixtures were continued during the night with poultices, but morning came without relief. Her suffering was now extreme. I increased the anodyne without effect, but by 4 p.m. her pain was so great and her cries so heart rending that I thought best to etherize her. At the same time I gave her five drop doses of laudanum every half hour. By the time she had five doses she dropped off to sleep, and was sleeping quietly at nine in the evening when I visited her. The next morning the pains had returned. I now thought best to have her bladder sounded by my friend Dr. Charles T Hunter, who found it free from any foreign body. At this time the knees were drawn up, the thighs were flexed upon the abdomen and the legs upon the thighs, and any attempt to straighten them caused the extremest torture; the belly was a *little* swollen, but the pulse did not exceed 100, and was not quick or irritable. There could not be said to be fever; the decided fever with which the attack commenced had long before disappeared. I had from the beginning said there was no peritonitis, but I now began to have misgivings. I continued the poultices and laudanum in sufficient dose to subdue the pain. The quantity required for this purpose was found to be less, and a good night was secured by moderate amounts, not more than two doses of five drops each. The next morning the abdomen was perfectly flat, or rather concave, the very reverse of swollen. The pain had almost completely passed away, and $\frac{1}{4}$ -grain of opium every three hours was sufficient to keep it in abeyance. In the evening she was free from abdominal pain, but complained of pain in her knee and ankle-joint, so that she could not straighten her limbs without much suffering, which I satisfied myself was not in her abdomen. The next day I had to leave the city early, and my friend Dr. Horace Williams saw her for me. All the joints of the lower extremity were now involved,—the hip, knee, and ankle joints—while the abdomen was free from pain. This settled the matter and made it certain that the attack was rheumatic. Under the use of salicylic acid these symptoms rapidly disappeared, and by Sunday, ten days after the first symptoms appeared, she had completely recovered.”—*Med. Times*.

Etiology of Gallstones.

The etiology of gallstones has long been a much discussed subject. The first recorded observations of gallstones in the human subject were perhaps made by Benivenius, of Florence, in 1502. About fifty years later, Fernelius, in discussing the subject, said:

"Sometimes also yellow bile, which has been, contrary to Nature, longer retained in the liver, and not been cleared out at the proper time becomes thick, and induces serious and very dangerous obstruction of the liver, so that (as we shall presently show) it becomes at times even transformed into stone in the gallbladder. Sometimes a stone grows in the gallbladder, which is black but quite light, and when immersed in water it floats upon it. It originated from yellow bile which, for a long time, retained in its own receptacle, and not evacuated in proper time, and not renewed by an influx of fresh bile, becomes hard to a wonderful degree."

Some of the early writers were of the opinion that gallstones were due to climate, long sleeping, imprisonment, etc. Riedel favored the belief that heredity was an important factor in their formation, while Benecke contended that arteromatous degeneration and gout played an essential part. Krauss and his followers supported the contention that rich diet and luxuriant living were important etiological factors. It was not until Klebs and Galippe practically demonstrated that the biological activity of bacteria was responsible for sialolithiasis, and that Galippe had asserted that he felt confident that other forms of calculi would be shown to be of bacterial origin, that investigators became suspicious of the bacterial origin of gallstones. Naunyn was the first to give his unreserved support to this view of the origin of gallstones. In 1897, Gilbert and Fournier succeeded in obtaining an experimental stone in a dog. Very recently, Lartigau has made extensive and painstaking researches. He has corroborated the findings of previous workers. Lartigau showed that the mere introduction of an aseptic foreign body into the gallbladder does not suffice to produce gallstones. The introduction of bacteria associated with mechanical irritation of the mucosa is followed, in a very large percentage of cases, by stone formation. If, at the time of bacterial introduction, the outflow of the bile is interfered with, or aseptic foreign bodies are also introduced into the gallbladder, the chances of stone formation becomes much greater.

The present-day theory of gallstones is that they are of bacterial origin. The mode of action of bacteria in producing gallstones remains somewhat obscure. It is probable that in most of the cases the bacteria cause epithelial desquamation thereby favoring the formation of cholesterin and bilirubin—calcium. Cushing has suggested that the clumping of the bacteria may be an important preliminary step, the clumped bacteria acting as a nuclei for the stones.

It seems fairly well demonstrated that the bacteria usually reach the gallbladder by way of the common duct. It has been clearly proven, however, that infection may take place through the portal circulation.

BOOK REVIEWS.

Minor and Operative Surgery, Including Bandaging.

By Henry R. Wharton, M.D., Professor of Clinical Surgery in the Woman's College; Surgeon to the Presbyterian Hospital, Philadelphia, etc. New (6th) edition, enlarged and thoroughly revised. In one 12mo volume of 642 pages, with 532 illustrations. Cloth, \$3 00 net. Lea Brothers & Co., Philadelphia and New York.

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The style of the work is clear and concise, and the illustrations frequent and especially helpful to a thorough understanding of the text. After all is said it must be acknowledged that it is the surgeon who gives the strictest attention to the correctness of detail who attains the greatest measure of success; to this end a work such as Wharton's is valuable to practitioner and student alike.

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